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TSC 2020 DIGITAL 27TH
NATIONAL INTERVENTIONAL CARDIOLOGY MEETING

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TURKISH SOCIETY OF CARDIOLOGY

TSC 2020 DIGITAL 27TH NATIONAL INTERVENTIONAL CARDIOLOGY MEETING

TURKISH SOCIETY OF CARDIOLOGY **TSC 2020 DIGITAL 27TH NATIONAL INTERVENTIONAL CARDIOLOGY MEETING**

Değerli Meslektaşlarımız,

TKD 2020 Dijital 27. Ulusal Uygulamalı Girişimsel Kardiyoloji Toplantısı'nın Organizasyon Komitesi ve Bilimsel Danışma Kurulu adına, sizleri 12 – 15 Kasım 2020 tarihleri arasında online olarak yapacağımız dijital toplantımıza davet etmekten büyük onur duyuyorum.

Her yıl gerek yurt dışından gerekse yurt içinden girişimsel kardiyoloji alanında önemli çalışmaları ve uygulamaları olan bilim adamları ve operatörler bu toplantı için bir araya gelmektedirler. Ancak içerisinde bulunduğumuz durum sebebi ile bu sene yine tüm dünyadan önemli konuşmacı ve katılımcıları bir araya getiren bu toplantının sadece bilgi paylaşımı ve tecrübe aktarımı değil; özellikle uluslararası bağlantıların kurulduğu, genç arkadaşlarımızın ufkunu açan ve geleceğe zemin hazırlayan bir dijital platform olmasını temenni ediyoruz.

Türk Kardiyoloji Derneği Girişimsel Kardiyoloji Birliği olarak her birimiz, sizleri 27. Ulusal Uygulamalı Girişimsel Kardiyoloji Toplantısı için ekranlarınız başında yine aynı heyecan ve beraberlik ile görmeyi ümit ediyoruz.

Saygılarımla,

Prof. Dr. Enver ATALAR

TKD2020 DİJİTAL
27. ULUSAL UYGULAMALI GİRİŞİMSEL KARDİYOLOJİ TOPLANTISI
12-15 Kasım 2020

TURKISH SOCIETY OF CARDIOLOGY
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SO-04

A rare complication; we have two

Hatice İrem Öztürk, Ahmet Anıl Başkurt, Ebru Özpelit, Nezihi Barış, Sema Güneri

Department of Cardiology, Dokuz Eylül University Faculty of Medicine, İzmir, Turkey

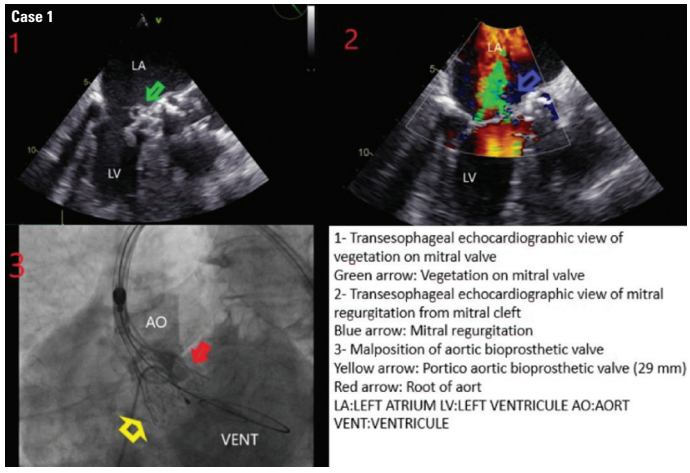
Introduction: Although transcatheter aortic valve implantation (TAVI) is obviously less invasive than open surgery, it is not free of complications. We describe two cases of mitral cleft on the occasion of TAVI.

Case 1: A 77-year-old man with symptomatic severe aortic stenosis (AS) underwent TAVI with a 29-mm PORTICO in January 2019. Logistic Euro-SCORE was 22.3%. At the beginning of TAVI procedure, valve position was slightly low, with the ventricular aspect of the stent abutting the anterior mitral leaflet. So, the device was retracted into the delivery catheter and repositioned. The patient presented 10 months after TAVI with fever, AV block and Enterecoccus faecalis in blood cultures. Antibiotic treatment was started. Transesophageal echocardiographic (TEE) analysis showed mild paravalvular aortic regurgitation (AR), ruptured anterior mitral leaflet aneurysm, severe mitral regurgitation, 2.6*1.0 cm abscess on the aorto-mitral fibrous intersection. FDG PET/CT showed hypermetabolic activity on the posterolateral part of the prosthesis and on spleen. Because the patient was getting worse hemodynamically, the heart team decided to operate him despite the high mortality risk. After surgery he died in a few days. Operation material was corrected our diagnosis.

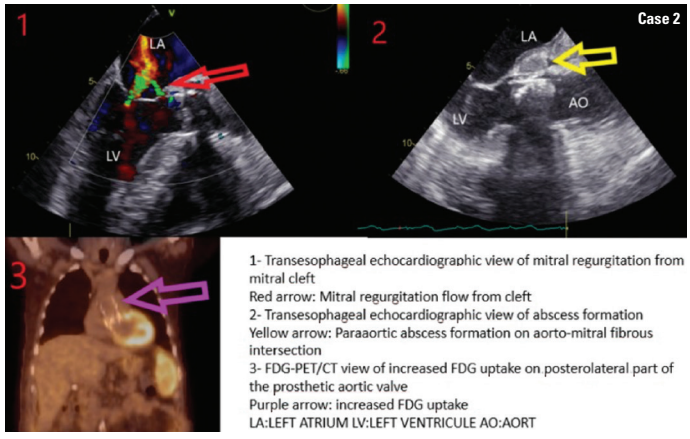
Case 2: A 84-year-old woman with symptomatic severe AS referred to ED for dyspnea. Logistic Euro-SCORE was 29.9%. She underwent TAVI using a 29-mm PORTICO in April 2018. Just as the case 1, it had to be repositioned, because the device was slided to the ventricle. 12 months after TAVI she was seen at the ED for fever, deterioration, alpha hemolytic streptococcus in blood cultures. TEE analysis demonstrated mild paravalvular AR, ruptured anterior mitral leaflet aneurysm contiguous with the aortic prosthesis,severe mitral regurgitation and 0.7*0.7 cm vegetatiton was detected on anterior mitral leaflet. One week after she showed symptoms suggestive of cerebral stroke due to a thrombus in arcus which was considered as embolic stroke. The patient was approved to follow up with medical treatment because of the high surgical risk. After 42. days of the daptomisin therapy she was hemodinamically stable and discharged.

Conclusion: In our cases, the possible reason of mitral cleft is the presence of endothelial damage produced in the anterior mitral leaflet by the stent of the prosthesis while retractinig it into the delivery catheter at low position. That damage would be the substrate for infection, resulting in infective endocarditis (IE) and the subsequent perforation of the leaflet, the development of vegetations and, potentially, embolic infarct. There are only 6 cases notified in the world like this. We would suggest that; when repositioning is needed, we must take back the prothesis at the aortic root level, before retraction into the delivery catheter. Also, when anterior mitral leaflet perforation is detected in a patient who has undergone TAVI, even after months through the implantation, we must be careful about İE.

Keywords: Infective endocarditis, mitral cleft, severe mitral regurgitation, TAVI complication.



1- Transesophageal echocardiographic view of vegetation on mitral valve
Green arrow: Vegetation on mitral valve
2- Transesophageal echocardiographic view of mitral regurgitation from mitral cleft
Blue arrow: Mitral regurgitation
3- Malposition of aortic bioprosthetic valve
Yellow arrow: Portico aortic bioprosthetic valve (29 mm)
Red arrow: Root of aort
LA:LEFT ATRIUM LV:LEFT VENTRICULE AO:AORT
VENT:VENTRICULE



1- Transesophageal echocardiographic view of mitral regurgitation from mitral cleft
Red arrow: Mitral regurgitation flow from cleft
2- Transesophageal echocardiographic view of abscess formation
Yellow arrow: Paraaortic abscess formation on aorto-mitral fibrous intersection
3- FDG-PET/CT view of increased FDG uptake on posterolateral part of the prosthetic aortic valve
Purple arrow: increased FDG uptake
LA:LEFT ATRIUM LV:LEFT VENTRICULE AO:AORT

SO-05

Dynamic left ventricul outflow obstruction, mimicking HOCM, after transcatheter aortic valve implantation

Abdulla Arslan,[1] Umut Kocabaş,[1] Hakan Altay,[1] Seckin Pehlivanoglu,[1] Fatih Aytemiz,[2] Gökmen Akkaya,[3] Ömer Kozan[1]

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[2]Department of Cardiology, State Hospital of Manisa, Manisa, Turkey
[3]Department of Cardiovascular Surgery, Ege University, İzmir, Turkey

Abstract: Aftertheadvences of transcatheteraorticvalveimplantation (TAVI), manyAS patients, formerly-considered inoperable, canreceive effectivetreatment. Insomecases, abolishing theleftventricularpressureoverloadcould leadtotheoccurrence of dynamicintraventricular cavitypressure gradients (DIG) with harmful clinical impacts. This phenomenon mimicking the physiology that seen in hypertrophic obstructive cardiomyopathy (HOCM). Potential dynamic intracavitary gradient should always be excluded in the acutely deteriorating patient postoperatively. We report acase how we managed the physiology of left ventricular outflow tract obstruction, mimicking HCOM, that acutely developed after TAVI. Case 62-year-old with severe aortics sclerosis woman referred to our institutionfor treatment. She was admitted to our hospital. In transthoracicechocardiogram (TTE) there was severe aortic stenosis. The LV was hypertrophic, Findings were seen in table and Figure 1. there was only mild mitral regurgitation. Aortic valve replacement was indicated and performed transcutanous way. A 23 mm Portiko aortic valve prosthesis implanted successfully, The peak pressure gradient across the aortic walve measured, 65 mmHg. We did postdilatation using 20x45 mm balloon. Checked the pressure again,there wasn't any pressure gradient (Figure 2). The patient was alert and feeling well, and in follow-up in Cardiac Care Unit, After 14 hours, patient had shortnessofbreath, In physical examination, she was found tachycardiac,there was crepittant ralles, laboratory finding,hemoglobin (hgb) value was decreased (before 13.1g/dl, after 8g/dl). In TTE findings are in table 2, It was mimicking HOCM physiology (Figure 3). We decreased the heart rate with metoprolol 200 mg and diltiazem 60 mg daily,give her fluid and replacing erythrocyte suspension (ES). We succeeded increasing the LV intracaviter volume. After all this, we observed the patient's symptoms were relieved enough, then we repeated the TTE, there was pressure gradient across the aortic valve 33/20 mmhg gradients, and at the point of LVOT 29 mmhg peak gradient with pw doppler, there wasn't SAM finding anymore, and only mild degree of MR (Figure 4). Discussion With the recent developments, TAVI has started to be applied more frequently.In the follow-up ofpatients afterTAVIprocedure, in case ofshortness of breath, low blood pressure, its necessarytoperform early TTEand toevaluate whether thereis a prosthetic valve dysfunction or any DIG. Independently of thecause, acuterelief of the high pressure overload statusby either AVR or TAVI, inthepresence ofconcentric LVHand hyperdynamic LV systolic function, couldlead to DIG and hemodynamic collapse. Predictive echocardiographic factorshave beenreported and comprise small LV diameters, good overall contractility, discrete asymmetric hypertrophy, high transvalvular gradients, and relative lynarrow LV outflow tracts. Filling pressure increaseby iv fluid administration aswellas decreaseof inotropyby giving beta-blockerswere sufficienttoimprovethe patient'scondition.

Keywords: Aortic stenosis, transcatheter aortic valve implantation (TAVI), dynamic intraventricular gradients (DIG).

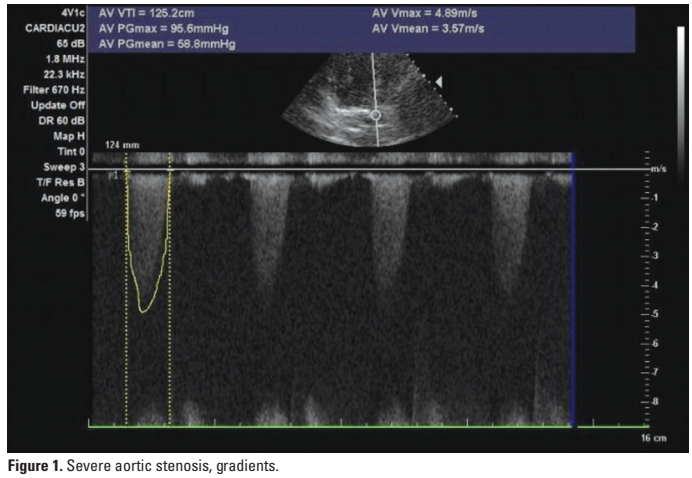

Figure 1. Severe aortic stenosis, gradients.

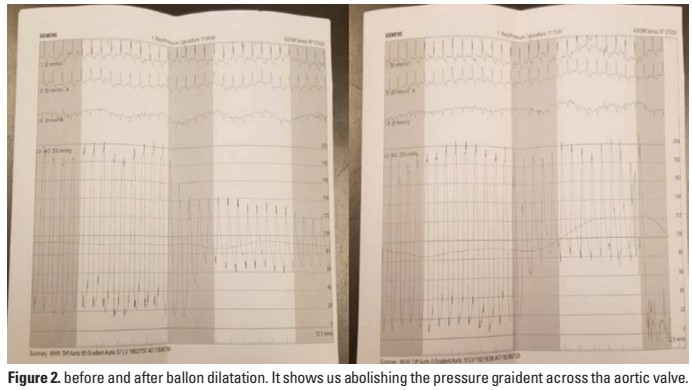

Figure 2. before and after ballon dilatation. It shows us abolishing the pressure graident across tha aortic valve.

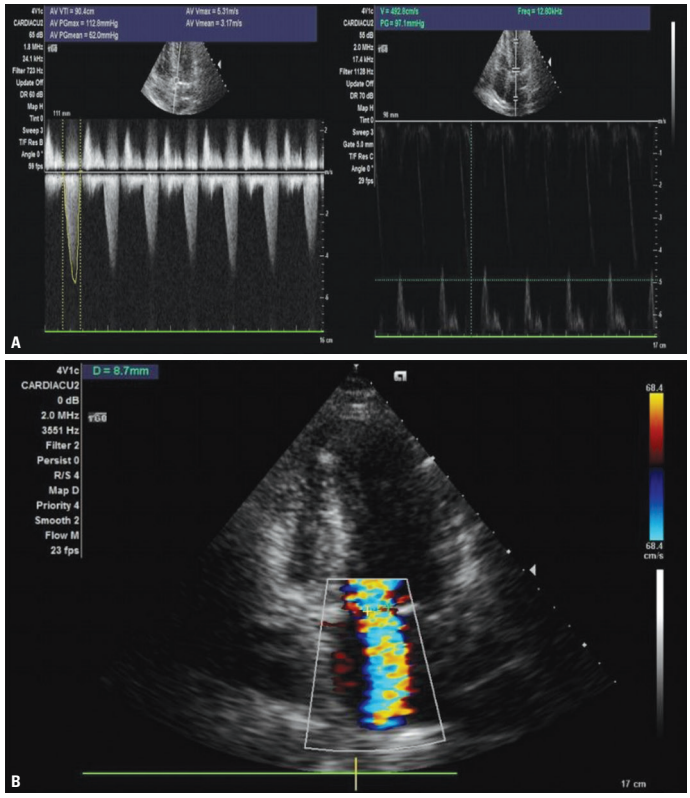

Figure 3. (A) HOCM physiology. **(B)** MR.

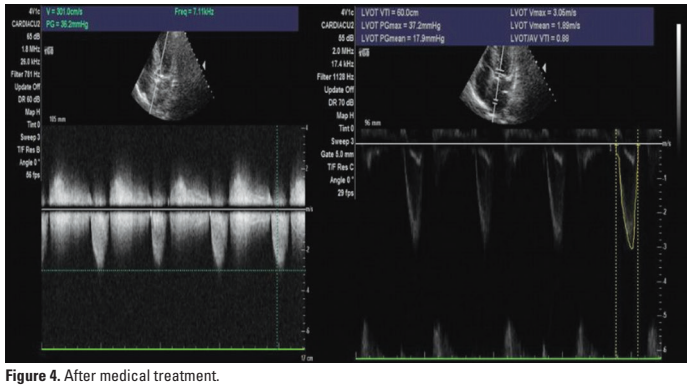

Figure 4. After medical treatment.

Table 1. Echochardiographic baseline findings.

Left ventricular end diastolic diameter	35 mm
Left ventricular end sistolic diameter	17mm
Posterior Wall	15mm
Interventricular septum	15mm
EF	%60
Av max	4.8m /sn
Gradients (Peak/mean)	95/58mmhg
Aort valve area	0.81cm2
Left ventricular outflow tractus (LVOT) gradients (peak/mean)	14/6.5mmhg
Aortic VTI/LVOT VTI	125/42

Table 2. Findings IN TTE after 14 hours of TAVI.

LVOT (peak/mean) gradients	112/52 mmhg
SAM (sistolic anterior motion)	Pozitif
Mitral regurtitation (MR)	Severe

SO-07

Treatment of severe mitral regurgitation after failed annuloplasty ring: A journey from complicated trans-septal transcatheter mitral valve replacement to successful simultaneous transapical valve-in-valve implantation and paravalvuler leak closure

Beytullah Çakal, Oguz Karaca, Onur Omaygenç, Hacı Güneş, Filiz Kızılırmak, Özgür Ulaş Özcan, Aydın Yıldırım, İrfan Barutçu, Bilal Boztosun

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A Sixty-four year old female with a history of insulin dependent diabetes mellitus, chronic kidney disease, hypertension and previous history of failed mitral ring annuloplasty 15 months ago (30 mm Medtronic 3D mitral ring) was referred to the cardiology clinic for the treatment of severe mitral regurgitation (MR). Transthoracic echocardiography revealed of an estimated ejection fraction (EF) 45% with right heart failure (TAPSE 16 mm) and severe MR. Since she was deemed ineligible for surgery by two heart teams, we planned to perform transseptal transcatheter mitral valve replacement (TMVR). The commercially available Mitral V-in-V smartphone application, designed by Vinayak Bapat, was also used to verify the ideal valve size. The application warned us regarding the risk for paravalvular leak preceding the procedure (Figure 1). Percutaneous femoral venous access was used. After a transseptal puncture under guidance of 2D- transesophageal echocardiography (TEE) and flouroscopy, balloon dilatation (12-mm x 60-mm) of the septum was performed to facilitate the crossing of the septum. 26 mm Sapien-XT stent frame was positioned centered within the pre-existing ring. The transcatheter valve (THV) was slowly mounted in the opposite direction to the transfemoral aortic THV within the ring under rapid pacing. Unfortunately, we could not able to achieve coaxial, centered deployment of THV in the prior annuloplasty ring complicating with severe paravalvular mitral regurgitation. So, para-valvular closure was planned. A hydrophilic 0.035" wire inside the catheter advanced through the defect and was substituted difficultly for a stiff 0.035" Amplatz wire however during this procedure, more dehiscence of the THV from the ring was noticed. The procedure was stopped without closing the defect. The patient hemodynamic status was stable after the procedure. Eight days later, transapical TMVR procedure was scheduled. A second 26 mm Sapien XT valve was implanted within the previous THV via a coaxial transapical access. However, persisting severe MR was still detected

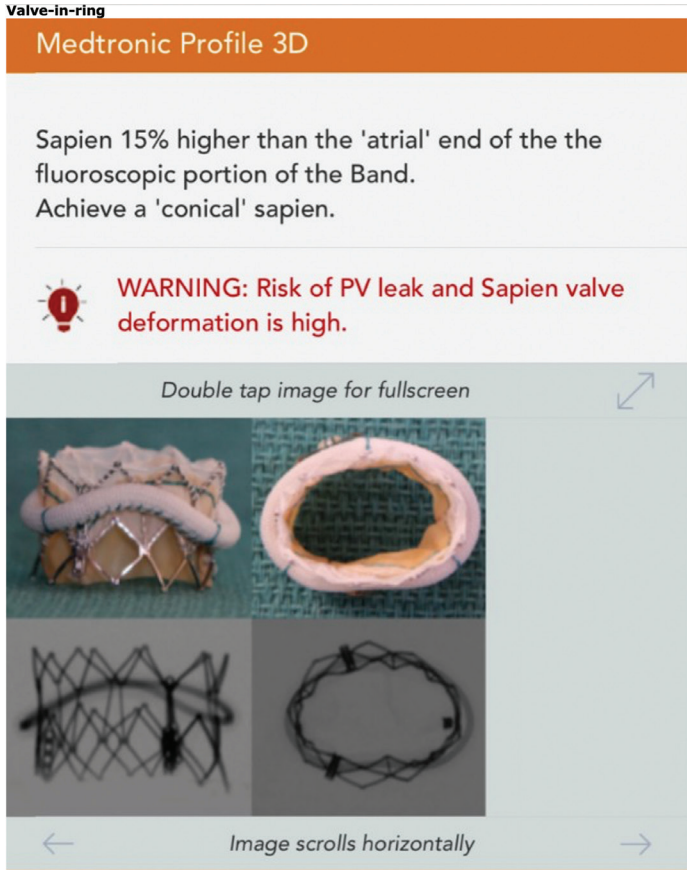

Figure 1. Commerically available application preceding the procedure warned us about the risk for PVL.

even though kissing balloons (20 mm in diameter) were inflated within the valve. We crossed the defect and closed using 14 mm Vascular Plug II. The patient was discharged home at fourth day after the second procedure.

Keywords: transcatheter mitral valve-in-ring implantation, paravalvular leak closure, transapical transcatheter mitral valve-in-valve replacement.

SO-08

Simultaneous closure of two mitral paravalvular leaks by veno-venous loop and successful retrieval of one of the embolized device by an endoscopic forceps device: Happy ending of a Nightmare procedure

Teoman Kılıç,[1] İrem Karaüzüm,[1] Şenol Coşkun,[1] Kurtuluş Karaüzüm,[1] Burak Acar,[1] Sadan Yavuz,[2]

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A 46 years old male patient was referred to our insitute for percutaneous transcatheter paravalvular leak closure. The patient had aortic and mitral mechanical valve opretation 4 years a go. Three D echocardiographic examination showed three mitral paravalvular leaks as two at medial an one at anterelateral regions. Venous sheath was inserted to the femoral vein and succesfull transseptal puncture was done. A steerable Agilis sheath was inserted to the left atrium. First we passed through the anterolateral leak with a Terumoguidewire and then we made a loop in the left ventricle. Then, we observed that Terumoguidewire went from the left ventricle to leaft atrium by passing through the second leak at medial region. We inserted a Goose-neck snare through the Agilis sheath and snared the distal part of the Terumoguidewire and take it into the Agilis sheath. Then we pulled back the Agilis sheath to the right atrium. We then put another venous sheath and send the Goose neck snare again to the right atrium. The distal part of the Terumo wire was re-snared in the right atrium and a veno-venous loop was automatically created. The terumoguidewire Veno-venous road was as: 1. proximal part was in one of the venous sheath, 2. distal part was sended from right atrium to left atrium by Agilis sheath, 3. Distal part was then passed from left atrium to left ventricle over the anterolateral leak and 4. Distal part was passed from left ventricle to left atrium over the medial leak and 5. Distal part was taken from left atrium to right atrium by the first snaring from the Agilis sheath and 6. Distal part was taken from right atrium to the other femoral venous sheath by second snaring. The first medial leak was closed by an AVPIII 14x5 device over the veno-venous loop. Residual leak was observed and a second AVPIII 6x3 AVPIII device. Paravalvular regurgitation at the anteromedial region was completely resolved. The leak at the anterolateral region was closed with an AVP III 8x4 device. However, the device was immediately embolised to the left atrium. Agilis sheath was reinserted from the one of the femoral vein and a Goose-neck snare was sended to catch the embolised device. Despite several attempts, we could not snare the device. We thought that we could catch the embolised device by a gastroenterology punch biopsy forceps device. We inserted the forceps device through the Agilis sheath which was still in the veno-venous loop. We quickly caught the device and removed it out of the body. A second AVPIII 12x5 device was inserted through the veno-venous loop and the leak was successfully closed. Paravalvular regurgitation was completely disappeared. The patient was discharged without any complication.

Keywords: Paravalvular leak closure, veno-venous loop, device embolization, endoscopy forceps catheter.

SO-09

Late leaflet entraptment and percutaenous removal of entrapted device in a patient after succesfull multiple paravalvular leak closure

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A 66 years old woman was referred to our clinic for mitral paravalvular leak closure. Patient had an history of aortic and mitral valve replacement surgery 10 years a go. She was reoperated due to severe mitral paravalvular leak but releaks was observed in another clinic. We detected severe PVLs in different regions two leaks at 8 and 9'a clock localization and 2 leaks at 4 and 5'a clock localizations. The two leaks atvthe anterolateral regions was closed with antegrade transseptal approach with 12x5 and 10x5AVP III devices. Third leak was closed by the same technique 1 week after the first procedure. We passed through the fourth little defect but the procedure was terminated due to long floroscopy time and we decided to close it according to patient's followup clinic. During the first follow up period, patient status was well without any hospitalization due to heart failure. However, three months after the first index procedure; the patient was readmitted with mitral stenosis clinic. Second device (10x5) at 9' a clock entrapted the leaflets and a clear stuck was seen on floroscopy. We decided to remove the device by percutaenous approach and the entrapted device was removed with EV3 Goose neck snare after hard attempts. The stuck was clearly disappeared and another smaller device (AVP III 8x4) was succesfully implanted. Finally, the fourth defect was closed with a 6x3 AVP III device. Patient's clinic was quickly resolved. In conclusion, late leaflet entraptment can develop after mitral paravalvular leak closure and these patients had to be closely monitorized after the index procedure.

Keywords: Paravalvular leak closure, late leaflet entraptment, percutaneous removal.

SO-10

Successful stent-retriever thrombectomy for acute cerebral embolization after transcatheter aortic valve implantation

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Background: Transcatheter aortic valve implantation (TAVI) has emerged as a less invasive treatment than surgical aortic valve replacement (SAVR) in elderly patients with high risk symptomatic severe aortic stenosis. The incidence of cerebrovascular events associated with TAVI varies from 1 to 11%, specially highest in the immediate post-procedure period (≤24 h). The incidence of peri-procedural stroke in TAVI has gradually decreased with the introduction of new TAVI devices but, once stroke occurs, the clinical course is usually poor. Although mechanical thrombectomy (MT) is one of the standard treatment choices in acute ischemic stroke, its efficacy and safety in TAVI patients have limited evidence in literature.

Case Presentation: A 84-year-old woman with symtomatic severe aortic stenosis underwent Transcatheter aortic valve implantation under local anesthesia. A 29-mm self-expandable CoreValve Evolut-R (Medtronic, Minneapolis, MN, USA) valve was directly implanted without predilatation. Aortic insufficiency was not observed in the control aortagraphy performed after the valve was implanted on the aorta. Ten minutes after valve implantation she developed left-sided hemiplegia and severe dysarthria, sensomotoric hemiplegia of the left side and neglect to the left side (NIHSS score of 14). We consulted the neuro-intervention team. It was decided to continue with mechanical thrombectomy rather than intravenous thrombolytic therapy because the patient had undergone large vessel intervention and received anticoagulant medication. She subsequent catheter angiogram in the neuro-angiography suit showed intraluminal clot leading to total occlusion in the inferior division and almost total occlusion in the superior division of the right middle cerebral artery (MCA) (TICI I). A 90-cm-long sheath was placed in the right distal cervical internal carotid artery, followed by advancement of a 5 F–135 cm distal access catheter up to cavernous carotid artery, and a 0.027"-lumen microcatheter into the M2 branch distal to the clot, coaxially. Then the clot was retrieved with a Solitaire stent retriever. The post-procedure angiography showed full recanalization of M1, M2 and M3 branches of the right MCA. Only the terminal part of the angular branch of the MCA was occluded (TICI IIa), which resulted in a small parietal lobe infarct in the follow up period. Ninety minutes elapsed from the onset of symptoms to reperfusion and NIHSS score of 5. Control CT of the brain conducted the day after interventional therapy demonstrated a small infarction in the parietal lobe.

Conclusion: This case emphasizes that mechanical thrombectomy can be an immediate and effective method of treatment in TAVI cases complicated by cerebral thromboembolism. Cooperation with the stroke care team and early invasive approach for unexpected embolization enable minimization of damage, as does the use of a filter device during the procedure to prevent further embolization.

Keywords: Mechanical thrombectomy, stent-retriever, stroke, transcatheter aortic valve implantation.

SO-13

Successful use of coronary balloon in crossing interatrial septum in a patient undergoing percutaneous paravalvular mitral valve leak closure

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49-year-old male patient underwent mitral valve replacement five months ago. During the postoperative period, patient developed severe anemia secondary to hemolysis and treated with numerous blood transfusions. On transesophageal echocardiography (TEE), he was diagnosed with anterolaterally positioned paravalvular leakage on the mechanical mitral valve with a diameter of 0.4 x 1.0 cm. After evaluation by our hospital's heart team, the patient was scheduled for paravalvular leak closure under general anesthesia with the aid of TEE guidance. One 6 French (F) sheath was placed into the femoral vein, 0.32 J tip guidewire was introduced through the femoral vein and passed into the superior vena cava. The Mullins sheath was exchanged with the 6F sheath with the support of the guidewire. Under TEE guidance, the Mullins sheath was approximated to the interatrial septum (IAS) for a proper position of the puncture. A Brockenbrough needle was introduced through the Mullins sheath and engaged the IAS. After clarifying the proper position of the needle with TEE, the septum puncture was performed. Backup Meier guidewire was advanced through the Mullins sheath into the left atrium in order to provide a support for the Flexcath sheath. Backup Meier guidewire was chosen due to severe fibrotic thickness of the IAS. The Flexcath catheter did not cross through the IAS despite multiple attempts following dilatation of the IAS with a 14F dilatator. We used a coronary balloon (4x20 mm non-compliant balloon) to dilate the IAS. The coronary balloon dilated in the IAS under TEE guidance. The Flexcath catheter passed through the IAS following the dilatation. Paravalvular leakage was successfully occluded with an Amplatz occluder device. The patient was discharged well on the post-procedural 4th day. Although graded balloon dilatation atrial septostomy has been shown as a treatment option for patients with congenital heart disease, this is the first case to show the safety and feasibility of coronary balloon in crossing the fibrous and thick IAS. Our case demonstrated that coronary balloon is a valuable adjunctive technique which can be performed easily with minimal risk to the patient.

Keywords: Interatrial septum, thick, coronary balloon.

SO-17

Saphenous vein graft stenting in a patient with situs inversus totalis

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A 59 -year-old patient was admitted to our hospital with complaints of chest pain. He was a known case of situs inversus with dextrocardia. ECG showed a negative P wave in the I and aVL limb leads, a positive R wave in the aVR limb leads, a prominent S wave in the left side chest leads and a prominent R wave in the right sided chest leads. Her routine biochemistry was normal and troponin was 3591 ng/L (0-45 ng/L). In 2012, this patient was performed CABG and the saphenous vein was anastomosed to the proximal left anterior descending artery (LAD), the saphenous vein was anastomosed (also in situ) to the proximal part of the ramus circumflexus (RCX). CAG using right transradial access with 6F judkins catheter revealed totally occluded left anterior descending artery (LAD) and totally occluded ramus circumflexus (RCX) which was filling antegradely. CAG demonstrated that the LAD was perfused by the saphenous vein graft (SVG). SVG to RCX was totally occluded. Aortocoronary saphenous vein graft to the LAD was stenosis 95% and displayed hazy image. Written informed consent was obtained from the patient for percutaneous coronary intervention. The saphenous vein graft to the LAD was selectively cannulated with a guiding catheter (Judkins Right 3.5, 6F guide catheter), and this was successful following anti-clockwise rotation and changing the angulation from LAO 60° to mirror image RAO 60°. Subsequently, 3.0×15 mm drug eluting stent (Xience Pro) was implanted with 14 atm pressure. The final result of coronary angiography showed that there was no residual stenosis in the stent of the saphenous vein graft to the LAD with the TIMI 3 grade flow. No complications occurred during hospitalization. Patient was discharged on the 2st post procedure day. This case was presented successful PCI in situs inversus dextrocardia who underwent CABG using a transradial approach. We performed angioplasty for stenosis in the saphenous vein graft with standard wire, balloons and stent, with a satisfactory angiographic outcome.To the best of our knowledge this is the first case in literature of saphenous vein graft PCI in situs inversus dextrocardia using transradial approach.

Keywords: Stenting, saphenous vein graft, situs inversus totalis, coronary artery bypass graft.

SO-22

TAP Technique in patient with acute anterolateral myocardial infarction and cardiogenic shock

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49 years old male patient, without any cardiovascular disease history, admitted to emergency service due to ongoing chest pain. The patient was conscious but dizzy, blood pressure was 88/54 mmHg. ECG relived acute anterolateral MI, echocardiography showed global left ventricular akinesia and ejection fraction was 15%. Therefore the patient was in cardiogenic shock. During patient was being prepared for urgent coronary angiography, ventricular fibrilliation was developed then DC cardioversion was done and sinus rhythm was established. Patient was taken to urgent coronary angiography and total thrombotic lesion on LAD proximal part was seen. Firstly 3.0x12 mm balloon angioplasty was done LAD proximal and TIMI 2 flow was established, then 2.0x15 mm balloon angioplasty was done LAD distal lesion. After balloon angioplasty; firstly 3.0x3.0x38 mm DES (Xience, 14 atm) was implanted LAD mid-distal part, secondly 3.0x23 mm DES (Xience, 16 atm) was implanted to LAD proximal part, thirdly balloon angioplasty was performed for overlapped stent area with high pressure (18 atm). After LAD angioplasty, Major Diagonal branch osteal lesion was considered as severe. Therefore firstly BMW wire was crossed to Diagonal branch via distal stent part, secondly balloon angioplasty was done with 2.0x15 mm semi-compliant balloon, thirdly 2.25x18 mm DES was implanted to Diagonal ostium with TAP technique. After stent implantation FKB was performed by 2.25x18 and 3.0x20 mm balloons. Finally POT was done with 3.5x15 mm non compliant balloon on LAD proximal. After coronary intervention, patient was discharged without any complication. Ejection fraction was improved to 53% on one month later control visit. Although current guidelines don't recommend two stent technique in general bifurcation lesions, especially thrombotic vessels; TAP technique may be lifesaving in such conditions. We planned provisional stent implantation only LAD in this patient but we turned TAP technique because of large diagonal branch. TAP technique most recommended technique on bifurcation lesions.

Keywords: Cardiogenic shock, myocardial Infarction, bifurcation, TAP techinique.

SO-23

Unprotected left main coronary intervention due to left main stenosis and LAD oclusion in patient with acute anterior myocardial infarction

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Background: Ostial occlusion of the left anterior descending (LAD) is a troublesome condition. Presize osteal stenting may cause incomplete lesion coverage or plaque shift into the left main or circumflex artery (Cx). Therefore, stent implantation from the distal left main coronary artery (LMCA) across the LAD may be reasonable for LAD osteal occlusion. We presented a case treated with stenting from LMCA across LAD due to acute anterior myocardial infarction (MI).

Case: 59 years old male patient, without any cardiovascular disease history, admitted to emergency service due to ongoing chest pain. ECG relived acute anterolateral MI, echocardiography showed global left ventricular akinesia and ejection fraction was 25%. Patient was taken to urgent coronary angiography and total thrombotic lesion on LAD proximal part was seen. After wiring both of LAD and Cx, 2.0 x20 mm balloon angioplasty was done to LAD proximal and TIMI 2-3 flow was established. After balloon angioplasty; firstly 3.0x33 mm DES (Promus, 14 atm) was implanted from LMCA to LAD ostium. After LAD stent implantation, first POT was done with 4.0x9 mm NC balloon. After POT, Cx rewired and kissing balloon inflation was performed by 2.0x20 and 3.5x12 mm NC balloons. Final POT was done with 4.0x9 mm non compliant balloon on LMCA. Final angiogram showed excellent stent expansion and there isn't any residual lesion. After coronary intervention, patient was discharged without any complication. Ejection fraction was improved to 45% on one month later control visit.

Conclusion: Main branch stenting with proper kissing balon inlation and POT should be recommended for the treatment of ostial LAD disease due to acute anterior MI.

Keywords: Left main disease, percutaneous coronary intervention, acute myocardial infarction.

SO-27

Percutaneous closure of coronary fistula in a patient with angina pectoris

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Coronary artery fistulas between the left anterior descending coronary artery (LAD) and the pulmonary artery (PA) are rare congenital malformations. Although most of the patients of coronary artery anomalies remain asymptomatic, some patients with coronary artery fistula may present with myocardial ischemia, myocardial infarction, congestive heart failure or sudden death. We present a case of fistulae between the LAD and the PA which was treated with invasive treatment. A 62 years old female patient presented to the cardiology clinic complaining of NHYA class 2-3 chest pain and dyspnea with exercise. Previous medical history was unremarkable except for hypertension. On physical examination, her blood pressure was 140/70 mm Hg and grade 2- 3/6 systolic–diastolic murmur was detected. Electrocardiogram showed a sinus rhythm. On echocardiographic examination, global ejection fraction was normal, mild mitral and tricuspid regurgitation were detected. Because of typical angina pectoris and dyspnea, coronary angiography was planned, which showed the fistula communicating from the LAD to the PA movie 01. There was not significant atherosclerotic disease in the coronary arteries. Due to the ischemic symptoms patient had, we decided to perform the percutaneous transcatheter intervention. Percutaneous transcatheter closure was performed, via the 7F sheat into the right femoral artery for access with an EBU 3,75 -7F guiding catheter into the left coronary artery. We use 0,014 PT-2 as a guidewire to cross the aneurysm on the diagonal branch.As a supportive guidewire we use whisper extra support. Fistula was catheterized selectively by microcatheter. The guidewire and microcatheter were easily inserted. The 4,0*8 mm target detachable coil was delivered by the anchor technique. To obtain complete occlusion, 3*10 mm and 2*6 mm coils were implanted to forming a conglomeration. After delivery of the coils, the angiography showed no contrast flowing through the fistula movie 02. The patient's post-procedure course was uneventful, and no major complication occurred. The patient was discharged on acetylsalicylic acid and clopidogrel therapy. At the follow-up visits, the patient was asymptomatic for angina and dyspnea. In this case, we presented successfully performed percutaneous coil embolization of LAD to PA fistula. Although transcatheter coil embolization and surgical therapy have similar parameters in terms of morbidity and mortality rates, the transcatheter coil embolization is superior to surgical therapy according to patient comfort and duration of hospitalization. In our patient, a fistula between the LAD and pulmonary arteries causing myocardial ischemia was successfully treated with percutaneous transcatheter coil embolization. In conclusion; hemodynamically significant CAFs may cause myocardial ischemia and heart failure. Anatomically suitable cases can be treated with transcatheter coil embolization.

Keywords: Percutan transcatheter closure, coroner artery fistula, LAD-pulmoner artery fistula.

SO-30

Successful treatment of acute left main coronary artery occlusion with percutaneous intervention in a patient with mitral metallic prosthesis valve

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A 55-year-old male patient with a history of mitral valve replacement 14-years ago, was admitted to the emergency department of our hospital with sudden onset severe chest pain and dyspnea. He had a history of smoking as a cardiovascular risk factor. He used warfarin for 1-year after the mitral valve replacement and he didn't used any other cardiac medication including warfarin for the last 13 years. His ECG showed acute ST-segment elevations on anterior and inferior derivations. He was also in cardiogenic shock status. 300 mg aspirin, 600 mg clopidogrel and 0.1 mg/kg IV enoxaparin bolus were given immediately. The patient was transferred immediately to the catheterization laboratory and 7F sheat was introduced through the right femoral artery. Diagnostic coronary angiography showed no lesion in the right coronary artery and acute total occlusion of the proximal left main coronary artery (LMCA) with no anterograde flow. The first floppy guidewire was advanced from the LMCA to the left anterior descending artery (LAD) and the second floppy guidewire advanced to the diagonal artery. The 3.0x20 mm semi-compliant balloon was inflated at the LMCA to LAD bifurcation. Then, another wire was advanced to the CX artery and 3.0x20 mm semi-compliant balloons were inflated repeatedly in the LAD and CX artery. Tirofiban treatment was started and was continued because of the intense thrombus burden during procedure (bolus of 25 µg/kg over 3 min i.v., followed by an infusion of 0.15 µg/kg/min for up to 24 hour). We planned simultaneous stenting of the LAD and CX arteries that extends to the LMCA with an aim of jailing the thrombus located at the LMCA, ostial LAD and ostial CX.For this reason we decided to use a simple and fast bifurcation method because the patient was in cardiogenic shock. 4.0x15 mm stent for LAD extending LMCA and 3.5x12 mm stent for CX extending LMCA were implanted with the simultaneous kissing stent technique. Final angiography showed TIMI 3 flow at the LAD and CX arteries. After the procedure, the patient recovered hemodynamically and his complaints regressed. Ejection fraction was 15% on transthoracic echocardiography and thrombus images were present on the prosthetic valve in mitral position. The following day we performed transesophageal echocardiography showed thrombus particles in the metallic prosthetic valve and a giant thrombus in the left atrium. The cardiology and cardiovascular surgery council decided to remove the thrombus surgically, but the patient did not accept the operation. Heart failure treatment was optimized during hospitalization and he was discharged 45 days after admission. In follow-up, Acetylsalicylic acid 100 mg + Clopidogrel 75 mg + Warfarine were given for triple therapy for 6 months after the myocardial infarction.

Keywords: Acute left main coronary artery occlusion, coronary intervention, mitral metallic prosthesis valve.

SO-31

Long term outcomes of the ABSORB bioresorbable vascular scaffold for the treatment of coronary artery disease: A single center experience from Turkey

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Background: Clinical evidence for the most intensively investigated member of bioresorbable vascular scaffolds (BVS), Absorb BVS were promising; however several meta-analyses encompassing the data beyond 1 year reported higher event rates of myocardial infarction, target lesion revascularization and scaffold thrombosis. Since there is paucity of published data regarding performance of Absorb BVS in Turkey, we sought to evaluate the long-term clinical outcomes.

Methods: A single center retrospective cohort was performed enrolling 98 patients treated with 135 Absorb BVS between February 2013 up to April 2017 at the Istanbul Medipol University. The primary end-point was major cardiac adverse events (MACE) which was a composite of cardiac death, target vessel myocardial infarction and target lesion revascularization (TLR).

Results: The median follow up period was 67 months. Mean age was 60±12 years, 78% were male, 38% had diabetes, 72% had dyslipidemia and 83% presented with chronic coronary syndrome. 59% of lesions were ACC/AHA type A/B1. Number of BVS per lesion was 1.2±0.4. Mean BVS length per lesion was 28±10 mm. Predilatation and postdilatation rates were 100% vs. 95%, respectively. MACE was detected in 22.4% of the patients. Myocardial infarction occurred in 8 patients (8%), BVS thrombosis in 5 (5%). Both early and very late BVS thrombosis events were noticed. TLR rate was 17.3%. Among the 5 deaths, two were classified as cardiac death. Rest of the noncardiac deaths were due to prostate and gastric cancers.

Conclusions: In our study, Absorb BVS was associated with increased adverse events in the longer term follow-up.

Keywords: Biovascular scaffold, percutaneous coronary intervention, ABSORB BVS.

SO-32

The successful radiofrequency ablation therapy for symptomatic patient with hypertrophic cardiomyopathy

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Hypertrophic cardiomyopathy (HCM) is defined as the presence of left ventricular hypertrophy with a spectrum including patients who are asymptomatic with or without obstruction, who may develop dyspnea, angina, or arrhythmias, and or even sudden death. The septal myectomy or alcohol septal ablation is typically reserved for those patients with symptoms despite optimal medical therapy. We present a case of radiofrequency ablation (RF) for a symptomatic 70-year-old male with hypertrophic cardiomyopathy with dual-chamber implantable cardioverter-defibrillator (ICD), who is not a good candidate for surgery and have not an appropriate septal artery for alcohol ablation. His medical history included verapamil (240 mg/day). The transthoracic echocardiography revealed septal hypertrophy of 19 mm and resting peak instantaneous left ventricular outflow tract (LVOT) gradient 100 mmHg with normal right and left ventricular ejection fraction, mild mitral and aortic regurgitation. After the explanation of the benefits and risks of the procedure, the patient was taken to electrophysiology cardiac catheterization laboratory. EnSite three-dimensional (3D) electroanatomic mapping system was used and the map of his bundle and left anterior/posterior fascicules were created. 3D transesophageal echocardiography was used to guide the ablation catheter along with the EnSite 3D mapping system. Under general anesthesia, the peak instantaneous LVOT gradient was 40 mmHg (Figure 1A). The TactiCath™ Quartz contact force ablation catheter (Abbott®) was used for ablation and was advanced retrogradely through the aortic valves using fluoroscopic guidance (Figure 1B). A total of 20 minutes of RF ablation (60–80 watt) was applied to the basal hypertrophied septal area utilizing the combination of the EnSite 3D mapping system and 3D transesophageal echocardiography (Figure 1C, D). There was no complication at the end of the procedure. After the procedure, the resting peak instantaneous LVOT gradient decreased to 17 mmHg. He was discharged from the hospital after 3 days (Figure 1E). In the literature, apical percutaneous RF ablation of the basal septum has been used for the same indication (1). They performed RF ablations for 15 patients with HCM. The difference between our technique and theirs is the access site, which is the femoral artery in our case. Our successful case has shown that percutaneous RF ablation of the basal septum could be used as an alternative technique if there is a contrandication for myectomy and septal alcohol ablation.

Keywords: Hypertrophic cardiomyopathy, radiofrequency ablation, three-dimensional electroanatomic mapping system.

SO-36

Type III coronary perforation treated with coronary graft stent during anterior myocardial infarction

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A 60-year-old male patient presented with 2 hours of chest pain. The electrocardiography revealed ST-segment elevation in leads V1 through V6. The patient was hemodynamically stable with blood pressure of 120/70 mmHg. The patient had no history of chronic disease. In the emergency department, 180 mg of Ticagrelor and 300 mg chewable aspirin were administered and the patient was taken to the catheter laboratory for primary percutaneous coronary intervention. The coronary angiogram showed the total occlusion of left anterior descending (LAD) artery at the level of diagonal artery. Intravenous heparin (100/IU per kg) was administered. After percutaneous transluminal coronary angioplasty (PTCA), 3.0x33 mm and 3.0x20 mm drug-eluting stents were deployed in telescopic fashion. After stenting, we performed post-dilation with non-compliant (NC) coronary balloon (3.5x12 mm). After then, the type 3 LAD coronary perforation was seen in the control angiogram. The NC balloon was inflated just proximal to LAD stent immediately. Protamine sulfate was used to reverse the anticoagulant effects of heparin. Within few seconds, the patient became hemodynamically unstable with blood pressure of 60/40mmHg. The transthoracic echocardiogram (TTE) showed cardiac tamponade and an emergency pericardiocentesis was performed, with immediate drainage of 600 mL of hemorrhagic fluid. After 5 minutes, the control angiogram revealed no leakage in the LAD and coronary graft stent (3.0x19mm) advanced through the same catheter without using double (pin-pong) guiding technique. The control angiogram revealed no leakage 30 minutes after the procedure. The control TTE revealed left-ventricular ejection fraction (LVEF) of 25-30% and there was no pericardial effusion. He became stable with blood pressure of 110/70 mm Hg and he was transfered to the coronary care unit without inotropic support. The He was discharged from the hospital after 5 days. At a 6-month follow-up, he is still on aspirin (81 mg/day), Ticagrelor (90 mb b.i.d.), metoprolol (50 mg/day), ramipril (2.5 mg/day), atorvastatin (80 mg/day) and he has no symptom. The control TTE revealed LVEF of 40-45% and showed mild apical septum and apex hypokinesia.

Keywords: Coronary graft stent, coronary perforation, primary percutaenous coronary intervention.

SO-37

Single coronary artery: A report of rare coronary anomaly

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Introduction: Single coronary artery is defined the origin of both the right and left main coronary artery from a single aortic ostium. Congenital coronary artery anomalies (CAA) are relatively uncommon, they are the second most common cause of sudden cardiac death (SCD) among young athletes. CAA are defined as congenital changes in their origin, course and structure and reported to be about 1% in the angiographic series. This anomaly usually involves an artery arising from RCA or right sinus of valsalva that supplies the distribution of LMCA or LCX artery. The CAA is usually asymptomatic, but sometime may be associated with life-threatening conditions including arrhythmias, myocardial infarction, congestive heart failure, syncope and sudden cardiac death. Atherosclerotic situations more important because of absent of totaly collaterally blood suppourt. Closing osteal area with tissue like flep in osteum lacation can cause suddenly death during exsersize.

Case: A 82-year old male patient admitted to our emergency room, for chest pain, chest discomfort, dyspnea, similar to acut coronary syndrome (ASC). He had no previous history of any cardiac symptom. His medical and family history was unremarkable. Cardiovascular exam revealed no any findings. Heart and lung auscultations were bilateral rals in lung exam and 2/6 systolic murmur was present. Systemic blood presure was 130/75 mmHg and pulse rate was 81 beat/minute. Biochemical results such as complete blood count, sedimentation rate and other electrolytes tests were normal. But trop I, CK-MB and CK result's were positive. The 12-lead electrocardiography revealed sinus rhythm, RBBB with a rate of 81 beat per minute and ST segment change in anterior leads. Transthoracic echocardiography (TTE) study showed normal left ventricle ejection fraction mildly depresed (50%) with mild –moderate tricuspid and mild mitral valve insufficiency. Coronary Artery angiogram (CAG) performed for the patient due to doubtfully pozitive cardiac markers. The coronary angiography, the whole coronary system originated by a single trunk from the left sinus of valsalva. The LCX artery proceeded posterioinferiorly and reach to left atrioventricular sulcus (Figure 1, 2). The left anterior desending (LAD) coronary artery orifice originated from left coronary sinus in seperately. Right coronary artery (RCA) after arising from the LAD artery posterior to the aortic root (Retro-aortic). Patients are followed with medical therapy without any problems.

Conclusion: Coronary artery anomalies may cause symptoms similar to coronary artery diseases even if absent of atherosclerotic process. However these anomalies may also be a vulnerable environment for progress of the coronary artherosclerosis. Coronary angiogram is cheap, easy access and with high successful rate for diagnosis of coronary artery anomaly. Patients should be done by suggesting avoiding heavy exercise and lifestyle changes.

Keywords: Coronary angiography, coronary vessel anomalies, sngle coronary sinus.

SO-47

Diagnostic catheter induced spiral dissection treated by successfully bail-out coronary stenting

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Background: Iatrogenic coronary artery dissection during coronary angiography is rare complication but brings catastrophic consequences. The exact incidence of dissections induced by diagnostic catheterizations is approximately around 0.008% but the exact rates remain unknown because of the underreported cases. We describe an iatrogenic RCA dissection caused by diagnostic catheterization in the course of radial angiography and successfully treated by stenting.

Case: A 62 years old woman with a history of hypertension presented with angina and her treadmill stress test revealed ST segment depression at Stage 3 on V4, V6 channel. Her angiography was planned via right radial approach. Left coronary system was successfully cannulated with 5F Tiger diagnostic catheter. Tiger diagnostic catheter was unsuccessful cannulating RCA, therefore we changed Tiger to 6F right Judkins catheter and successfully cannulate RCA. Patient had not any symptoms or chest pain and angiography revealed normal coronary artery. Radial sheath was removed and hemostasis was provided by TR band (TERUMO). During the follow ups, 2 hours after the procedure, patient had a typical chest pain and her electrocardiography demonstrated ST segment elevation in the inferior derivations. Immediately, coronary angiography was performed via right femoral artery and RCA was cannulated with 6F Judkin's right catheter. Tip D, an extensive spiral dissection was observed at proximal portion of RCA and after the dissection the RCA was totally occluded. Firstly, a floppy wire was used to cross but the wire reached false lumen and the floppy wire was left at the dissection line to occlude false lumen. Another soft wire was engaged to lumen and with a Corsair micro-catheter (Asahi Intec) the wire was guided back into true lumen. The wire was advanced into distal radial artery and subsequently, 2.75x22 and 2.75x18 Zotarolimus – Eluting stents (RESOLUTE INTEGRITY) were deployed from mid portion of the RCA to ostium. Final coronary angiography was revealed good result.

Discussion: Iatrogenic dissections during canulated mostly occure with guidewire catheters especially extra-backup catheters such as Amplatz, XB even though, diagnostic catheters may also cause. Powerful contrast injection, tough manipulation of the catheter, deep intubation are the most common reasons. Pressure dumping and ventricularisation before contrast injection, may infer ostial plaques and the catheter tip positioned against the wall. Despite all the attention, any dissection has occured, while crossing the lesions, usage of the hydrophilic coating guidewires should be avoided which, significantly increase complication rates. It should be ensured that the dissection line and ostium in osteal dissections are completely covered with stent. Proper catheter selection, keeping coaxial position of the catheter, also kind and rigorous handling ensure the operator keep away from undesired outcomes.

Keywords: Coronary dissection, iatrogenic dissection, catheterization complications, bail out procedure.

SO-52

Coronary perforation complicated with balloon shaft rupture

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Introduction: Coronary perforation during the percutaneous coronary intervention (PCI) is a rare condition. Proximal balloon catheter occlusion is the first therapeutic choice for sealing the perforation. Failed deflation of occlusion balloon catheter is an uncommon condition. Here we present a case which has stuck balloon catheter and subsequently developed the rupture of the shaft.

Case Report: 74 years old male has been admitted to our clinic for CCSIII angina. He has a no history of coronary artery disease. He has hypertension, diabetes, and hyperlipidemia. Exercise-stress test was positive for ischemia. The echocardiogram was showed an ejection fraction of 60%. There was no significant valve disease. Left coronary arteriogram revealed thin intermediate artery with osteal stenosis of 80%. No significant stenosis on LAD or Cx were present. RCA have mid 40% and distal 30% stenosis, long 95% stenosis on right posterior descending artery (RPD). PCI for RPD lesion was decided as an ad-hoc procedure.
RCA was cannulated with a JR4 catheter. Floppy guidewire passed the lesion 1.5x15 mm compliant balloon

was ruptured while on 2 atm pressure. 1.5x20 mm balloon compliant was ruptured either. Control angiogram revealed with type I coronary perforation. Consequently, balloon inflations at proximal segment for hemostasis of coronary perforation were administered. Protamine sulfate was used. There was still coronary perforation marks. A 2.0x15 mm balloon inflation with 6-8-10-12 atm at RPD ostium was administered. Balloon deflated. And no more extravasation was seen. When the operator tried the withdraw balloon catheter, it didn't come out from RPD, it stuck on the place. After a withdrawn attempt, catheter shaft has ruptured. Balloon catheter shaft came out but the balloon was on the lesion. Extravasation was not seen. After careful examination of images, there was flep like image throughout RCA. It was rest of the radiolucent catheter shaft and it lies from the balloon from RPD to RCA ostium. Patient has mild pericardial effusion (6 mm) and mild dyspnea and mild to moderate chest pain. An emergent cardiovascular operation was performed. It was seen that balloon were ruptured coronary artery from the inferior wall and stuck on this segment. Ruptured balloon shaft and balloon was surgically extracted. The patient was discharged on the 8th day of hospital stay with good functional capacity

Conclusion: Percutaneous coronary intervention can cause multiple complications. The operator should aware of potential complications and should perform additional maneuvers.

Keywords: Balloon, coronary, perforation, rupture, shaft.

SO-54

Succesfully treatment of iatrojenic coronary perforation

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A 58-year-old male patient underwent coronary angiography due to angina on exertion, which revealed a significant lesion in the mid segment of Left Anterior Descending artery. Coronary intervention was planned. After a implantation of a 2.75x24 mm drug eluting stent, postdilatation was performed with a 3.0x15 mm non-comliant balloon. However, immediately after the postdilatation, patient described a severe crushing chest pain. Contrast injection, while the balloon was still inside the guiding catheter, showed the contrast leak into the pericardial cavity. At this point, balloon re-advanced inside the stent and inflated to prevent bleeding. Pericardial effusion was evident in the concurrent bedside echo did, however, there was no sign of cardiac tamponade. Nevertheless prolonged inflation did not seal the perforation and covered stent implantation was considered with the Ping-Pong technique. Left coronary artery was engaged with a second guiding catheter through another femoral sheath, and guidewire was advanced to the inflated balloon. Guidewire was advanced distally during a short deflation of the balloon. A Papyrus PK covered stent was inserted over this wire into the DES covering and sealing the perforation site. First guidewire and balloon were removed before covered stent implantation. The patient was discharged 3 days after the intervention. His follow- up at 1 year was uneventful.

Keywords: Coronary perforation, interventional, anjiography, covered stent.

SO-55

Successful management of a left main coronary artery thrombus causing cardiogenic shock with thrombolytic treatment

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Left main coronary artery (LMCA) thrombus may be encountered in patients who administer to the emergency service with ST elevation myocardial infarction (STEMI) and cardiogenic shock and undergo primary percutaneous coronary intervention (PPCI). In the presence of high thrombus burden allowing distal coronary flow, intravenous thrombolytics may be used instead of invasive coronary interventions to prevent complications such as no-reflow and stent thrombosis. In this case, we report a patient with a similar scenario who was treated successfully with thrombolytic therapy. A 39-year old man without a previous medical history was admitted to our emergency department with acute inferolateral myocardial infarction and cardiogenic shock. PPCI was planned and in the coronary angiogram, a high volume dense thrombus was detected in the LMCA extending into the circumflex artery. Distal coronary TIMI 2 flow was present. Due to an increased risk of no-reflow which might be mortal in this case, we planned to give intravenous thrombolytic treatment to this patient. 100 mg tissue plasminogen activator (tPA) infusion was started according to the STEMI protocol. After 15 minutes of infusion, accelerated idioventricular rhythm and 80% ST resolution was observed. His blood pressure increased and the patient recovered from shock. Six hours later, coronary angiography was performed again and total resolution of the thrombus in LMCA was observed. The echocardiography revealed hypokinesia of inferior wall with 50% ejection fraction. The patient was discharged with dual antiplatelet therapy after 5-day hospitalization. In conclusion, in select cases with STEMI and high thrombus burden allowing distal coronary flow, intravenous thrombolytic treatment may be chosen instead of primary stenting to decrease coronary thrombus and provide total recovery so that complications such as no reflow and stent thrombosis may be prevented.

Keywords: Left main coronary artery thrombus, thrombolytic, cardiogenic shock.

SO-63

Myocardial infarction with elevated st segment associated with capecitabine use

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5 fluorouracil (5fu) and capecitabine are commonly used anti-metabolic agents in the treatment of many solid tumors, colorectal and breast cancers. Capecitabine is an oral prodrug that is converted to 5fu in a sequential 3-step enzymatic reaction that occurs primarily in the liver and in tumour cells. It has gained popularity because of its efficacy, ease of administration, and milder toxicity profile as com-pared with 5fu(15). These drugs may cause cardiototoxicity. Cardiac side effects are usually based on coronary vasospasm. Published case reports indicate that chest pain may develop within 48–72 h after commencement of Capecitabine therapy, as was the case with this patient. Even coronary vasospasm is based acute coronary syndromes have a greater incidence, heart failure and arrhythmia are reported. Capecitabine is a pro-drug and transform to 5FU. Cardiotoxic side effects occur less with capecitabine in comparison to 5FU. Here in we present a spontaneously and completely resolved capecitabine induced ST-segment elevated myocardial infarction with normal coronary anatomy.

Keywords: Myocardial infarctüs, coronary vasospasm, breast cancer, chemotherapy, capecitabine.

SO-68

A rare cause of coronary ischemia: right coronary artery anomaly

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Right coronary artery (RCA) origins from right sinus valsalva. However, in some patients it originates from left sinus valsalva or pulmonary artery. Here, we present a case of right coronary artery anomaly resulted in ischemia detected in miyocardial perfusion scintigraphy.

Case: A 68-year-old male patient was admitted to our cardiology policlinic with chest pain for 1 year. His pain was retrosternal, radiating both shoulder and arm and and increasing with exercise. He had no medical history before. On his physical examination, pulse rate was 85 beats per minute, respiratory rate 12 per minute, blood pressure 120/70 and SO_2 96%. No pathological finding was found in oscultation. On his baseline electrocardiography (ECG) there were minimal ST depressions and fragmante QRS morphologies in DII and avF derivations. Echocardiography showed no left ventricular wall motion segmenter defect and the patient's valves were normal and there wasn't hypertrophy. Myocardial perfusion scintigraphy (MPS) was planned for ischemia investigation. MPS detected reversible inferior ischemia, therefore we recommended coronary angiography to the patient. The patient underwent coronary angiography via femoral access using Judkins technique. During coronary angiography we detected a coronary anomaly that right coronart artery (RCA) was originating from the left sinus valsalva and there were no obstructive lesions in the arteries. Angiography was finished and the patient was transferred to cardiology clinic. Because of the possibility of malignant variation, we suggested computarized tomography to the patient but he rejected it and he discharged second day of admission without any problem.

Discussion: The prevalence of coronary abnormalities is reported to be approximately between 0.3% and 1%. Most coronary anomalies are asymptomatic, and the prognosis is good. On the other hand, these anomalies are said to be associated with sudden death and ischemic heart disease. Anomaly detection rate was increased by imaging methods such as computarized tomography. It is important to diagnose these patients, because in the presence of malignant variation like ectopic coronary origin from pulmonary arter or interarterial type, surgery will be life saving. In our patient the cause of the scintigraphy positive is thought to be a steal syndrom. Due to left coronary system arteries' nature, blood flow is more than right coronary flow. Because of this, as RCA's blood flow decreased, ischemia was detected in our patient.

Keywords: Right coronar artery, coronary anomaly, ischemia.

SO-71

Challenge in crossing hostile anatomy during transfemoral TAVR

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Case: A 76 years old male suffering from dyspnea on exertion was admitted to our clinic for evaluation dyspnea. TTE revealed: LVEF 60%, Severe aortic stenosis with Pgmax/mean: 105/57 mmHg, mild-moderate aortic regurgitation and mild-moderate mitral regurgitation. In his past medical history the patient had CABG and hypertension. The calculated STS score was 5.8% which indicated intermediate risk for surgical treatment. The patient was discussed with our heart team and due to the patent LIMA-LAD greft referred to TAVR. Preprocedural Planning: The native annulus area was 419 mm^2 and periemeter was 74mm on CT. Coronary ostium heights as well as the sinus valsalva diameters were compatible for a TAVR procedure. According to the annulus area initially a 26 mm Edwards Sapien XT valve implantation was planned. On CT scan examination we observed that the patient had a very hostile access anatomy. Iliofemoral arteries were heavily calcified. Circular calcifications were observed on both common femoral arteries (Figure 1–3). Because of the mentioned hostile anatomy, our access strategy was transfemoral approach with surgical cut-down. A 18F Edwards E-sheath, which is compatible with 26 mm Sapien XT valve was introduced with 0.035 Amplatz superstiff wire. But the sheath could not cross iliofemoral anatomy. Then we exchange our guidewire with the stiffer ones like Backup Meier and Lunderquist Extrastiff. But again the sheath could not cross. The buddy wire teqnique and lubrification of the sheath with propofol also could not help us to cross. Then we decided to give a chance to a different valve system like Evolute which has a lower profile. According to the perimeter the valve was a 29 mm EvoluteR. Initially we didn't want to risk the valve with the in-line system which would provide us a 14F profile and we tried to cross the anatomy with a 29 mm Evolute compatible 18F Sentrant sheath.This sheath easily crossed the anatomy.The following steps were like a conventional TAVR procedure.

Discussion: Although both sheaths external diameters were the same, the Sentrant sheath could easily crossed the hostile anatomy. But the issue in this heavily calcified anatomy was the hydrophilic ability rather then the external diameters. For this case we can say that the Medtronic Sentrant introducer sheath was superior than the Edwards E-sheath in terms of the hydrophilic ability. But this does not mean that Medtronic Corevalve Evolute-R is a better valve system than Edwards Sapien XT system. In fact, the Edward valve systems with their steerable abilities may have some advantages especially if you are dealing with a hostile arcus aorta or a horizontal aorta.

Conclusion: In conclusion, having at least two different valve systems (balloon and self expandable) in your catheter laboratory and being experienced with them is safer interms of procedural success and struggling with the complicatios.

Keywords: Transfemoral, hostile anatomy, introducer sheath.

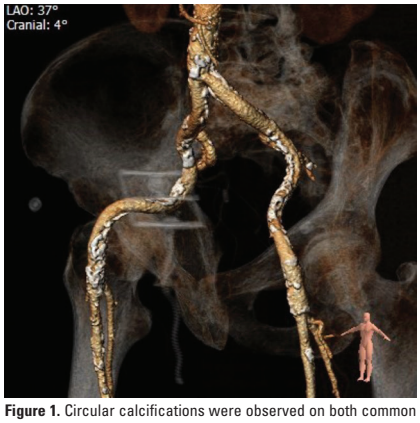

Figure 1. Circular calcifications were observed on both common femoral arteries.

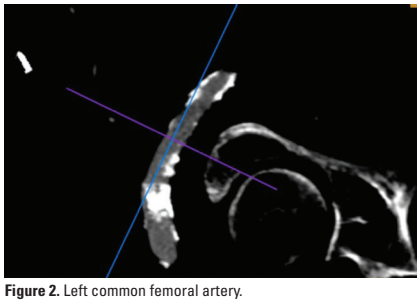

Figure 2. Left common femoral artery.

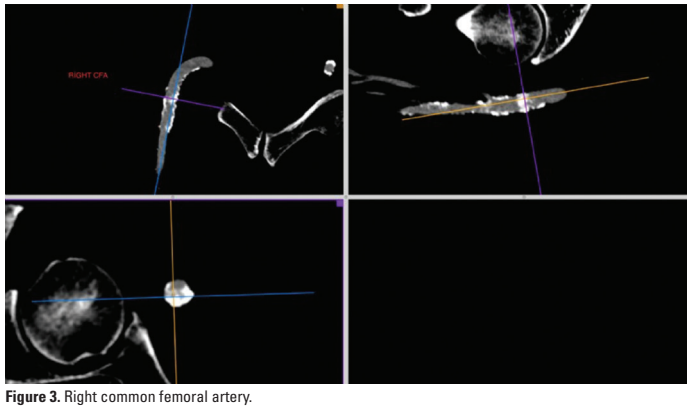

Figure 3. Right common femoral artery.

SO-72

A huge left main coronary artery aneurysm: What to do with?

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Introduction: Left main coronary artery (Lmca) aneurysms are very rare, encountered incidentally in approximately 0.1% of patients. here we describe a 72-year-old man presenting a prior history of chest pain and palpitations whose coronary angiogram revealed a saccular aneurysm of the left main coronary artery.
Case Report: A 58 year-old man presented with chest pain and palpitation. His medical history included diabetes mellitus and coronary artery disease (coronary stent before a year). Physical examination was normal. His electrocardiogram revealed atrial flutter with st segment depression Trans-thoracic echocardiography showed mitral regurgitation, left ventricular wall motions were normal. (60%), Troponin levels were normal.The patient was planned for invasive diagnostic procedure. The coronary angiogram revealed a huge aneurysm of the left main coronary artery. There were no stenotic lesions noted at the aneurysm site or elsewhere. Computed tomography coronary angiography was showed 2.0×2.0 mm saccular aneurysm at the bifurcation of LAD and circumflex artery. The patient was advised surgery but he refused and was conservatively managed with dual antiplatelets including aspirin, clopidogrel and statin. the patient was also evaluated for the other systemic diseases which may be related with coronary aneurysms such as connective tissue disorders or Kawasaki disease, but none were diagnosed.
Discussion: Left main coronary artery aneurysms (CAAs) are the most uncommon coronary abnormality among all coronary artery aneursyms. The largest published series of left main CAAs is reported with 22 cases. The incidence of left main CAAs in that study was 0.1% among 20 332 adult patients who underwent routine coronary angiography. The width of the largest left main CAA observed by this group was 1.9 cm. In a study of 3200 coronary angiographies, 22 patients were identified with CAAs (0.68%). The aneurysms were found at the stem (12%), anterior descending (52%), right coronary artery (20%), and circumflex artery (16%). LM aneurysms in older patients are more likely to be caused by coronary atherosclerosis. Other possible causes include Kawasaki disease, arteritis, mycotic–embolic disease, dissection, congenital malformation, and connective tissue disorders. Percutaneous coronary intervention or bypass surgery is the first treatment choice for a CAA in settings of acute coronary syndromes.5 Management options of CAA include three options: surgical ligation of the CAA accompanied by distal bypass surgery; percutaneous stenting with covered stents; and conservative medical management with continued antiplatelet therapy.
Keywords: Left main coronary artery, aneurysms, huge.

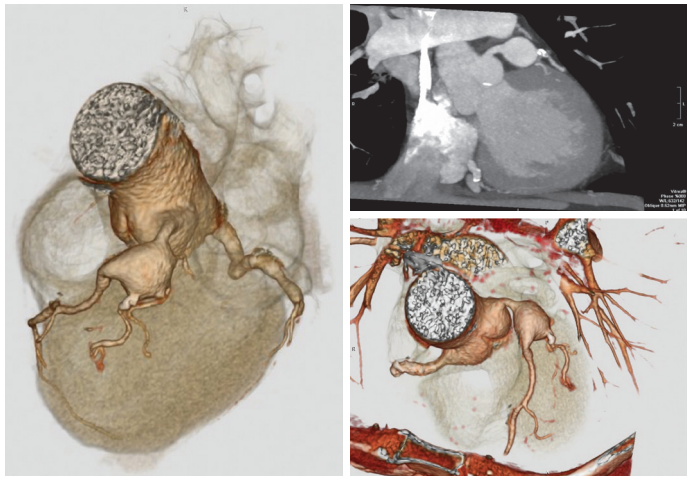

Figure 1. Computed tomography coronary angiography was showed 2.0×2.0 mm saccular aneurysm at the bifurcation of LAD.

SO-73

An iatrogenic perforation of the superficial femoral artery with directional atherectomy: Successful endovascular repair

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A 71-year-old man was admitted to our clinic with lifestyle-limiting left calf claudication.He could walk less than 50m without the calf discomfort, consistent with Rutherford III claudication. His past medical history was not notable for any cardiovascular diseases. CT angiogram showed severely calcified iliac arteries with mild-moderate stenosis and heavily calcified superficial femoral arteries (SFA).Also there was a huge long segment calcific plaque burden at the ostium of the left SFA (Figure 1, 2). After discussion with the patient, iwe decided to proceed with the EVT of the left SFA. The right common femoral artery was accessed and with the cross-over teqnique angiography confirmed severely calcific, eccentric stenosis of the proximal and distal SFA. Due to heavy calcification our initial strategy was atherectomy first rather than angioplasty alone and bail-out stenting. A 0.018-inch wire was navigated in the distal popliteal artery and a 6.0-mm Spider filter (Covidien Technologies) was placed. HawkOne directional atherectomy catheter (Covidien) was slowly advanced through the stenosis. After 5-6 cutting passages through the calcified area, debris were collected in the reservoir. But after these attemps angiogram showed a rupture of the proximal SFA. We tried to stop extravasation with balloon tamponade teqnique but prolonged balloon dilations did not work.Then we discussed with our surgeons but due to heavy calcifications and emergency status we decided to go further with EVT with a stent graft. The initial greft stent size was a 80x60 mm Fluency (Bard, Murray Hill, NJ). During the deployement, after 50% of the stent was deployed the stent stopped to expand due to a possible teqnical error.Then we deployed a 60x40 mm Fluency graft stent to the distal segment of the targetted location and a 38x60 mm balloon expandable greft stent (Atrium, Advanta V12) for the proximal segment which were the only stents we had in our cath lab.After deployement these two stents angiogram showed no extravasation. After the procedure the patient had severe thigh hematoma and urgent CT performed to exclude any ongoing bleeding. CT showed no bleeding and patency of the SFA. The patient was followed up about 10 days for the hematoma resolution and hemoglobin levels and he was discharged with medical theraphy. 6 months following the procedure, control CT showed no complications and patency of the greft stents as well (Figure 3).
Discussion: Percutaneous treatment of peripheral arterial disease has become the mainstay of current clinical practice. Balloon angioplasty, debulking therapies, and stenting are important advances.However, these procedures are not without risks. Important complications of any percutaneous intervention include vessel rupture and perforation. These complications can result in distal organ injury, bleeding into surrounding tissues, and even death. We should keep in mind that these complications may be successfully repaired with EVT.

Figure 1. CT angiogram showed moderate to severely calcified iliac arteries with mild-moderate stenosis and heavily calcified superficial femoral arteries (SFA) with severe stenosis especially on the left side.

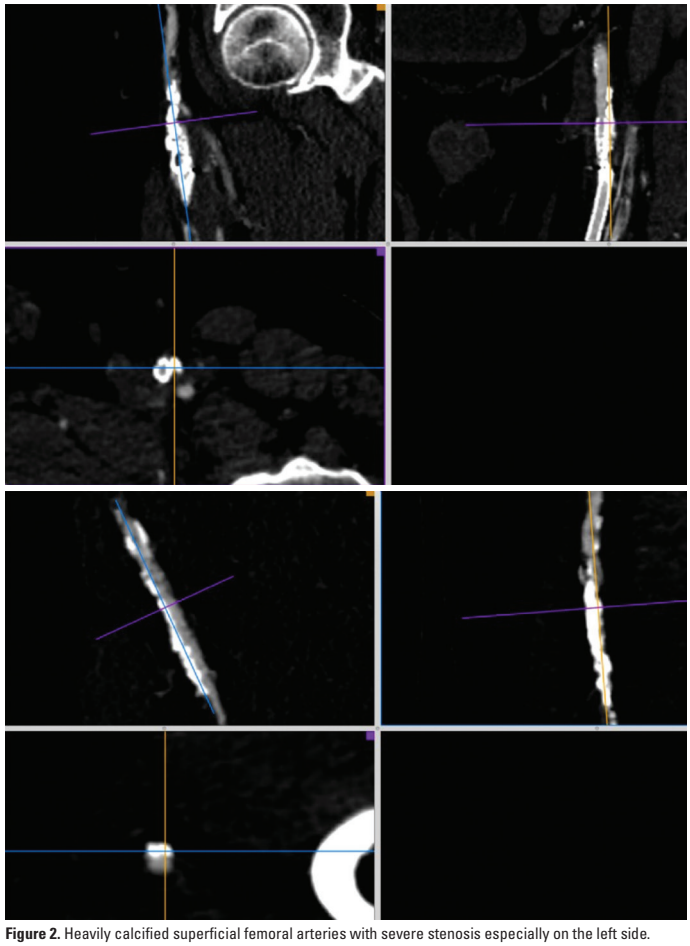

Figure 2. Heavily calcified superficial femoral arteries with severe stenosis especially on the left side.

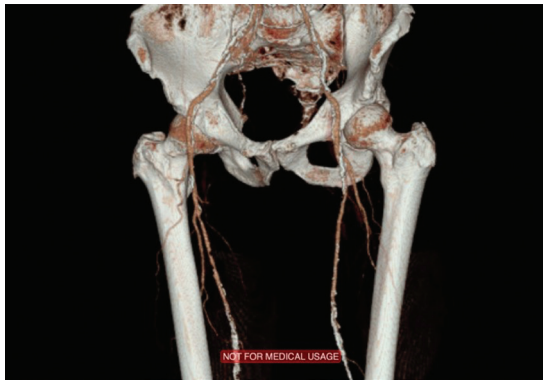

Figure 3. 6 months following the procedure, control CT anjiogram showed no complications and patency of the greft stents as well.

SO-77

Dual coronary to pulmonary artery fistulas complicated with significant left to right heart shunt

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Introduction: Coronary artery fistulas are usually an incidental findings during coronary angiography with an incidence of 0.1–0.2% and dual coronary fistulas are found in 5% amongst this group of patients with unknown long term outcome. We hereby report a case in a female at the age of 72 with right coronary artery and left anterior descending artery to pulmonary artery fistulas complicated with significant left to right heart shunt.

Case: A 72-year-old woman with chest pain and positive troponin levels was admitted to our emergency department. The ECG showed atrial fibrillation and biphasic T waves in infero-lateral derivations (Figure 1). Physical examination was unremarkable and chest X-ray was normal. Echocardiographic evaluation showed normal left ventricular functions with 65% ejection fraction and mild mitral regurgitation. Right chambers were enlarged and systolic pulmonary artery pressure was 62 mmHg. Doppler analysis revealed a significant jet flow in the main pulmonary trunk without definite identification of its source. Coronary angiogram showed two large fistulas originating from the proximal right coronary artery and proximal left anterior descending artery drained into the pulmonary artery. The pulmonary blood flow to systemic blood flow ratio (Qp/Qs) was 2.1:1 which indicates a significant left to right heart shunt. An exercise Thallium SPECT myocardial imaging revealed no perfusion defect of the left ventricle. A CT angiogram performed to see the fistula track exactly for a possible percutaneous closure. An option of percutaneous closure of fistula or surgical ligation was discussed with the patient but she declined any interventional therapies. The patient was treated with medical therapy. On regular follow-up, she is doing well in the last one year without any worsening of symptoms

Discussion: Coronary fistulas most often remain asymptomatic without clinical consequences but large fistula may lead to myocardial ischemia, heart failure, pulmonary hypertension, infective endocarditis or even rupture. While most of coronary fistula had no significant left to right shunt a previous report has noted a significant shunt in a patient with dual coronary fistula which was managed conservatively Most of the times, these fistulae are small and incidentally detected during coronary angiography, while others are identified as cause of continuous murmur, angina, acute myocardial infarction, sudden death, coronary steal, congestive heart failure, infective endocarditis, arrhythmias, coronary aneurysm formation, or superior vena cava syndrome. We should keep in mind that significant left to right heart shunt resulting with elevated pulmonary pressure is a very rare condition for coronary fistulas.

Keywords: Coronary fistulas, pulmonary artery, pulmonary hypertension.

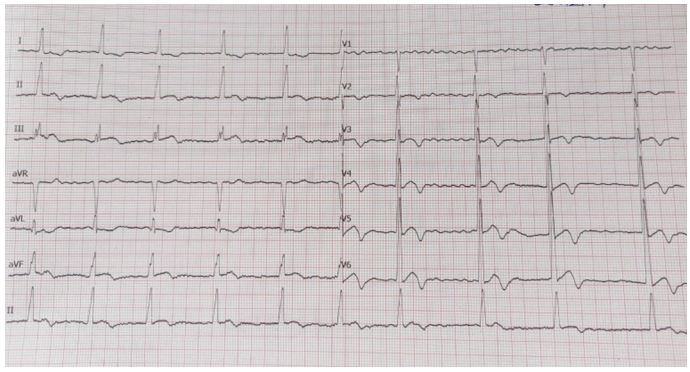

Figure 1. ECG findings.

SO-79

Myocardial infarction with elevated ST segment associated with misoprostol use

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Misoprostol (15-deoxy-16-hydroxy-16-methyl PGE1) is a synthetic prostaglandin E1 analogue with antisecretory and mucosal protective effects (3). Misoprostol (Cytotec) is commonly used for cervical priming, the management of miscarriage, the induction of labor and the management of postpartum hemorrhage. It can be administered orally, vaginally, sublingually, buccally or rectally. It is used commonly for the termination of pregnancy within the first two trimesters of pregnancy in developing countries (1, 2). The other Pge 1 analogue is gemeprost which is known to have major cardiac adverse effect. However, misoprostol has only a little adverse cardiac effect. Misoprostol is a safer drug than gemeprost for the termination of pregnancy. We have reported a case of 43-year-old woman with active smoking and hypertension who developed an episode of transient acute coronary artery vasospasm following the administration of intravaginal and sublingual misoprostol. This report shows that misoprostol can also be associated with acute coronary syndrome. Especially, the patients who have cardiac disease should be careful when taking it.

Keywords: Misoprostolü, acute coroner-y syndrom, myocardial ınfarctus,coronary vasospasm.

SO-81

Intractable spasm in a hypoplastic radial artery during coronary angiography: How could we overcome?

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26-year-old male admitted to the emergency department of our hospital with a chest pain. His history was irrelevant. On his physical examination, cardiac sounds were normal. His blood pressure was 130/80 mmHg and pulse rate was 83/min. Electrocardiogram showed sinus rhythm without clear ST T segment changes. Troponin value was nearly above normal limits. Other laboratory parameters were normal. Patient was hospitalized in coronary care unit. He underwent coronary angiography to rule out coronary artery disease. Angiography was planning to perform through right radial access. Allen test showed palmar arch was dominantly perfused from ulnar artery. 6 Fr sheath was introduced to radial artery. Then 5 mg verapamil, 200 mcg nitroglycerin and 5000 U heparin was administrated from sheath. Given the absence of 5 or less Fr catheter, 6 Fr judkins right 4.0 catheter was inserted through sheath. Catheter easily engaged right coronary ostium. Angiogram showed normal right coronary artery. While pulling right judkins catheter back to sheath it entrapped inside axillary artery and patient was feeling pain. We administrated increasing dose of nitroglycerine and verapamil through radial sheath. Also, forearm was covered with heat compress. Despite these applications, spasm was not relieved. Patient underwent deep anesthesia without intubation. However, catheter couldn't be retrieved. Then we followed the procedure via femoral access. 6 Fr sheath was introduced from right femoral artery. 6 Fr judkins left diagnostic catheter was advanced through sheath. After cannulation of left main coronary artery, Left coronary arteries were demonstrated to be normal. Then the catheter coming from femoral access was directed to right subclavian artery. Right upper extremity angiogram showed intact brachial artery. However, it was demonstrated that there were catheter entrapped in radial artery originated from upper part of brachial artery. Since patient was unresponsive to vasodilators and sedatives, he was intubated. Nevertheless, catheter was still stuck in accessory radial artery. As a last resort axillary nerve blockage was applied (Figure 1). Eventually catheter was able to be retrieved 15 minutes later. Last upper extremity angiogram showed hypoplastic radial artery arising from upper brachial artery. Patient was transferred back to the intensive care unit during weaning period. Radial pulse was normal. He was discharged from hospital uneventfully. Despite preventive measures, radial spasm can be encountered during coronary angiography. Some patients with anatomic variations may be resistant to the conventional treatments. After failure of vasodilatators and anesthetics neuro axial nerve blokage can be choosed as a bail out strategy.

Keywords: Radial spasm, coronary angiography, radial artery variations.

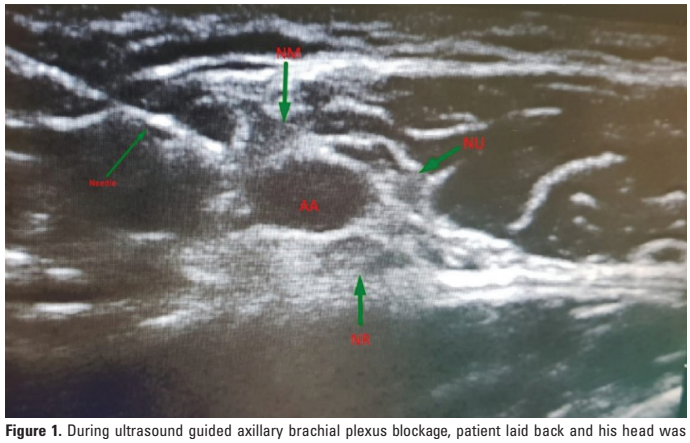

Figure 1. During ultrasound guided axillary brachial plexus blockage, patient laid back and his head was turned to left. Right arm was abducted to 90° position and prepared with sterilizing solution. Ultrasound probe was placed in the short axis orientation to the area where the pectoralis major muscle inserted onto the humerus. Once axillary artery flow was demonstrated, 24-gauge stimulation needle advanced in-plane over skin with an angle of 45 degree. When the needle was seen by ultrasound, 10 cc 0.250% 15 ml bupivacaine and 15 ml 1% lidocaine was applied each three separate points,radial ulnar and median nerve root, around axillary with a total amount of 30 ml anesthetic solution (AA: Axillary artery; NM: Nervus medianus; NR: Nervus radialis; NU: Nervus ulnaris).

SO-83

Intervention to inrarenal aorta

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62 y, female patient. Severe complaint of claudication on both legs after walking distance 20 meters. Right ABI 0.48, left ABI 0.52. After CT angiography, there was a 95% stenosis in the infrarenal region. No additional pathology was detected in rheumatology and other evaluations. Conventional angiography showed a 62 mmhg gradient on lesion area. After the radial pigtail insertion, we passed the lesion from femoral insertion with the pilot 150 wire and 5f vertebral catheter, we placed amplatz super stiff wire over the vertebral catheter, first 9 * 30 mm balloon, then 20 * 40 mm self expandable stent placed to the lesion area. Postdilatation was performed with 18 * 40 mm numed balloon (Figure1–3). The patient is comfortable now, and he has started walking. Cladication completely regressed.

Keywords: Adominal aorta, peripheral stent, intervention.

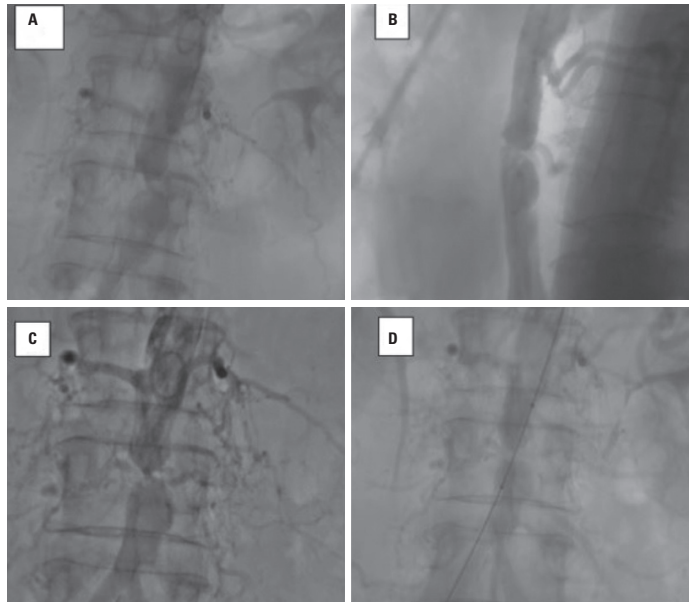

Figure 1.

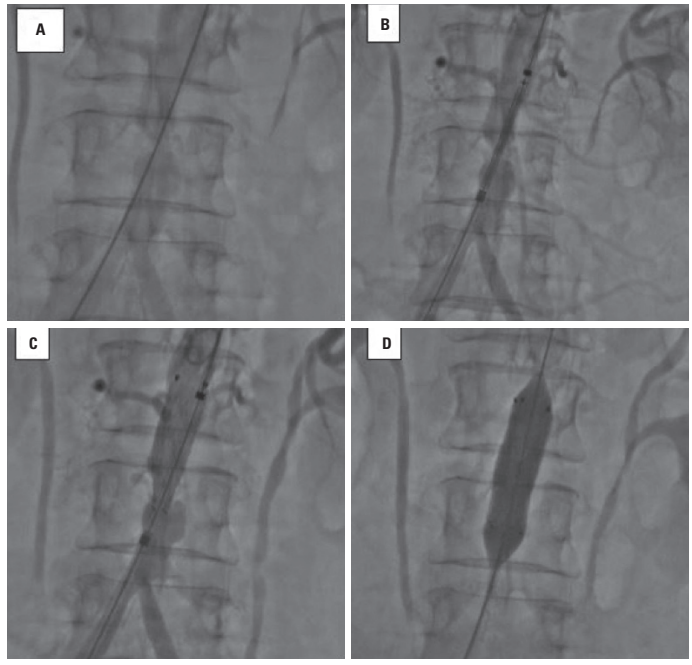

Figure 2.

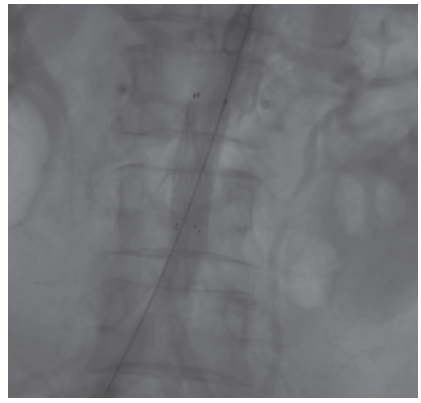

Figure 3.

SO-85

Angiographic image of pneumothorax

Çağrı Yayla, Ali Can Özkan, Mehmet Akif Erdöl, Ahmet Göktuğ Ertem, Ender Örnek

Ankara City Hospital, Ankara, Turkey

64 years old male patient due to complete syncope and AV block pacemaker was implanted in external center. The patient was admitted to the emergency department because of increased dyspnea and chest pain. Early coronary angiography was performed and non-serious lesions in the coronary vessels are detected. Coronary angiography showed an appearance similar to ventricular aneurysm. Then echocardiography is performed normal results. After that chest film is performed and pneumothorax is detected. Angiography showed interesting images of the lung with pneumothorax (Figure 1–6).

Keywords: Pacemaker, pneumothorax, coronary angiography.

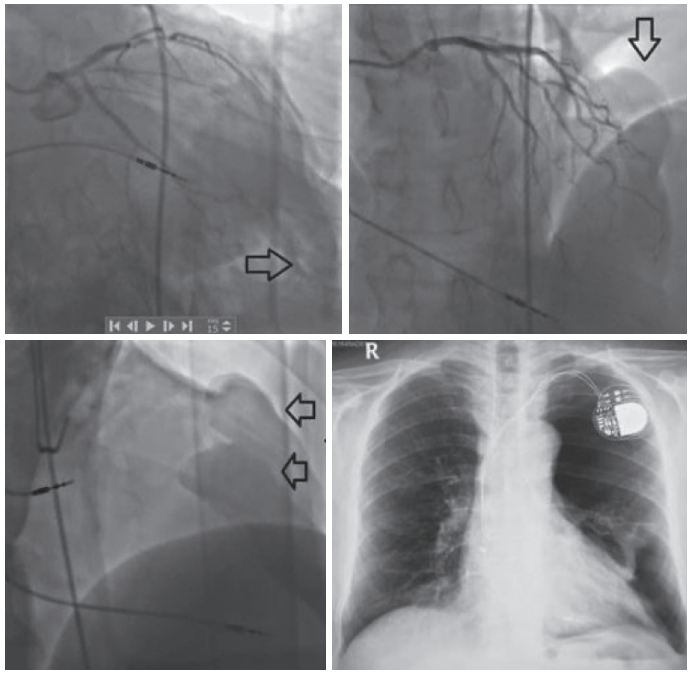

Figure 1.

SO-87

Right coronary artery originating from the distal left circumflex artery

Mevlüt Serdar Kuyumcu, Bayram Ali Uysal, Oğuz Aydın

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An isolated single coronary artery (SCA) is a rare anomaly. Most patients with a congenital coronary artery anomaly are asymptomatic. We report an extremely uncommon variant, where the right coronary artery arose from the distal segment of the left circumflex artery with coronary ectasia.

Introduction: Congenital coronary artery anomalies are infrequent and usually detected incidentally during routine coronary angiography performed for the evaluation of coronary artery disease. We present a patient where the right coronary artery (RCA) originated as a branch of the distal left circumflex (LCX) artery.

Case report: A 32-year-old, smoker male complaining of typical chest discomfort with family history of CAD was admitted in our hospital. Baseline electrocardiogram was normal. An echocardiogram revealed normal biventricular functions and no regional wall motion abnormality. Serial cardiac enzymes were normal. Cannulation of the left coronary ostium using a 6F femoral optitorque catheter revealed a SCA that divided into the left anterior descending (LAD) and the LCX arteries. Only a single left coronary ostium was seen to arise from the aorta. Review of all the angiographic images confirmed an isolated SCA with the RCA originating from the distal LCX.

Discussion: Congenital coronary artery anomalies are infrequent, with variable severities. Isolated SCA is extremely rare, with an incidence rate of 0.024–0.066% in the general population. The classification of SCA proposed by Lipton et al. categorizes patterns according to the site of origin and anatomical distribution. The anomalous coronary artery is first designated with "R" or "L" depending upon whether the ostium is located in the right or left sinus of Valsalva. It is then designated as Group I, II or III. Yamanakaand Hobbs found that the L-I group of SCA has a benign course. Chou et al. reported that 4 out of 12 patients who had an RCA originating from the distal LCX artery required coronary artery bypass grafts. As the L-I variant of SCA is extremely rare, it is difficult to predict whether patients of this type of coronary artery anomaly are at high risk or benign course. Though most cases are asymptomatic, angina can occur due to acute take-off angles, slit-like orifices, luminal compression by anomalous course between aorta and pulmonary, slow flow and accelerated atherosclerosis. Our patient had musculer bridge in the mid LAD.Therefore, we treated the patient with aspirin.

Keywords: Isolated single coronary artery, congenital coronary artery anomaly, coronary artery anatomy.

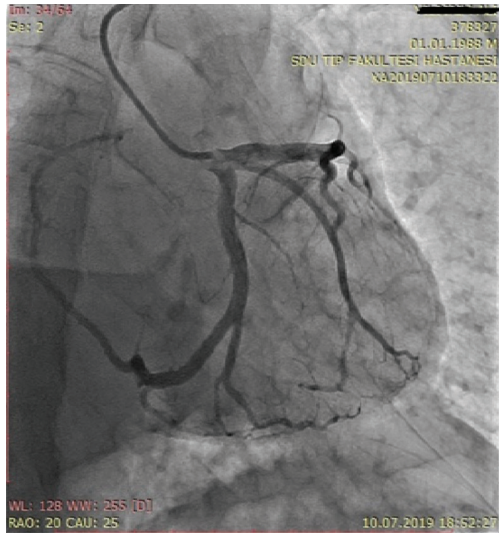

Figure 1. Right anterior oblique caudal view: Single coronary artery bifurcating into left anterior descending and left circumflex (LCX) with right anterior oblique arising from the distal LCX and coursing beyond the atrio-ventricular goove.

Figure 2. Coronary angiogram left anterior oblique caudal view showing the dominant LCX with right coronary artery originating from the distal segment of LCX.

Figure 3. Aortic root angio revealing left main coronary artery arising from left sinus of Valsalva and absent right coronary ostium.

SO-89

Anomalous origin of the left circumflex artery from the right coronary artery presented with a non ST elevation myocardial infarction: A case report

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Introduction: Coronary artery anomalies are found in 0.6% to 1.55% of patients who undergo coronary angiography, and the increasing use of diagnostic coronary angiography is uncovering even more such abnormalities. We present a very unusual case of an anomalous origin of the left circumflex coronary artery (CX) from the proximal right coronary artery (RCA).

Case presentation: A 81-year-old man was admitted to our hospital with a recent history of chest pain. His electrocardiogram reveals mildly depression of ST in the leads of the lateral wall. Troponin and the remaining cardiac enzymes were elevated. He was hemodynamically stable with a blood pressure approximately 100/60 mmHg. The patient received dual antiplatelet therapy (aspirin 100 mg/day and clopidogrel 300 mg once and after at a dose of 75 mg/day) and enoxaparin for 7 days; the remaining therapy was a statin, an angiotensin converting enzyme inhibitor (ramipril) and a beta blocker (metoprolol). Coronary angiography showed a critical thrombotic lesion located in the circumflex artery. After ballon angioplasty with 2.0x 15 mm ballon of circumflex artery stenting with 2,75x16 mm sirolimus eluting stent of CX was performed.

Conclusion: The anomalous CX most commonly arises from a separate ostium within the right sinus, or as a proximal branch of the RCA. Although this anomaly is classified as benign and asymptomatic, and a few cases of sudden death, myocardial infarction, and angina pectoris in the absence of atherosclerotic lesions have been reported. Our patient presented with a non ST elevation myocardial infarction.

Keywords: Congenital coronary artery anomaly, coronary artery anatomy, acute coronary syndrome.

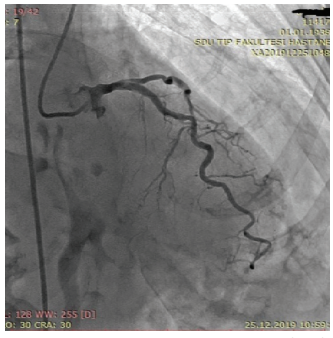

Figure 1. The left anterior descending artery (LAD).

Figure 3. Ballon angioplasty of CX.

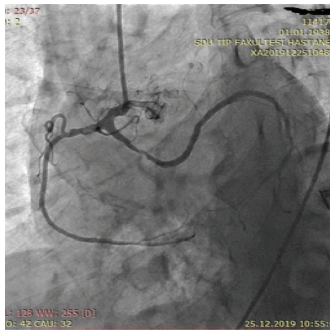

Figure 2. The right coronary artery (RCA); note the stenotic lesion in the proximal of CX and the anomalous origin of the left circumflex artery (LCx) from the proximal RCA.

Figure 4. Stenting of CX.

Figure 5. After stenting of cx view.

SO-95

Successful Percutaneous transcatheter closure of large fistula from the left main coronary artery to the left ventricle

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Case Report: A 23-year-old male patient admitted with palpitation, fatigue and exertional dyspnea. In his physical examination, a heart rate of 110/min and 3/6 systolodiastolic murmur in the left parasternal area were detected. ECG showed sinus tachycardia. Transthoracic echocardiography revealed a fistula towards the left ventricle. CT angiography confirmed the fistula from the left main coronary artery to the left ventricle. Coronary angiography clearly showed the fistula from the left main coronary artery towards the left ventricle. The present symptoms of the patient were thought to be due to fistula and the percutaneous closure of the fistula was planned. It was entered through the right brachial artery, and sheathless was placed in the left main coronary ostium. 0,014 inch Floppy wire was passed from the left main coronary artery, through the fistula, into the left ventricle and stabilized in the aorta. The floppy wire was replaced with extrasupport wire with the help of a microcatheter. Then the wire was exchanged for a 0.035 stiff wire using navicross. Sheathless was placed into left ventricle over the stiff wire. The fistula was closed with a 13 cm AVP-2 device. In the angiography, it was observed that the fistula was closed and the coronary arteries flow was normal. After the procedure, the patient's symptoms improved. He was discharged with the medication of oral aspirin 100 mg and 75 mg clopidogrel once a day. Coronary artery fistulas are rarely detected cardiac anomalies. While small and asymptomatic ones can be followed up with medical treatment, larger and symptomatic ones should be closed While in patients with a left to right shunt; pulmonary hypertension, right heart failure, high output heart failure and symptoms due to coronary steal phenomena may exist; in those with left-left shunts, high-output heart failure, chronic ventricular volume, and coronary steal phenomena may reveal Our patient had symptoms due to high output heart failure because of the large fistula. Surgical closure is recommended in patients who will be operated for other cardiac reasons, whereas percutaneous closure may be preferred in patients who do not have additional cardiac disease as in our patient. Coils can also be used during percutaneous closure. However, because of the need for more than one coil, increased fluoroscopy time and the amount of contrast volume, as well as the risk of embolism due to the high flow rate in the artery, the vascular plug is commonly preferred [8] Mostly, a single vascular plug is sufficient to close the fistula. In this case, because left main coronary artery was large, and for better catheter stabilization, we placed the 9-F sheathless on the left main coronary ostium. In this way, we didn't have to change the guiding catheter again and it made this process easier. As in our patient, successful percutaneous closure with AVP-2 without the need for surgery in symptomatic patients can be performed.

Keywords: Coronary fistul, percutaneous transcatheter closure, left to right shunt.

SO-96

Alteration of ST segment elevation from lateral to inferior in a patient with acute myocardial infarction: Which is infarct related artery: RCA, circumflex or diagonal?

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Introduction: The electrocardiogram (ECG) is a diagnostic test for patients with possible or established myocardial infarction. But sometimes it is difficult to correlate ECG findings and the infarct-related region. Here we describe a rare case of high lateral myocardial infarction which altered to inferıor myocardial infarction within the 5 minutes due to the lesions in right coronary artery, left circumflex artery and LAD first diagonal branch.

Case Report: A 45 year-old man presented emergency department with typial chest pain. The ECG showed sinus bradycardia at a rate of 57/min and ST-segment elevation in I and aVL with reciprocal ST depression in II, III, and aVF (Figure 1). He was admitted to the coronary care unit (CCU). Just 5 minute after admission to the CCU, repeated ECG showed ST-segment elevation in II, III, and aVF with reciprocal ST depression in I,aVL, V1–V5 (Figure 2). He treated with intravenous heparin, aspirin and ticagrelor. Coronary angiogram showed triple vessel disease with significant thrombotic stenosis of first diagonal branch of the LAD (95%), 99% stenosis of the circumflex artery and complete occlusion of right coronary artery. The patient had severe chest pain during the procecure and initially we decided to treat RCA occlusion first. Soon after the revascularisation of RCA with balloon angioplasty plus stenting, patient's chest pain resolved. Then the circumflex artery is also revascularisated. Osteal thrombotic lesion of first diagonal branch of the LAD was left for medical treatment without any intervention. The patient was discharged after 3 days, with the prescription of aspirin (100 mg/day), ticagrelor(180 mg/day), metoprolol (50 mg/day), perindopril (2,5 mg/day), and atorvastatin (40 mg/day).

Discussion: High lateral STEMI is associated with ST elevation caused by acute occlusion of the first diagonal branch of the LAD. Occlusion of the circumflex artery (LCX) may also cause ST elevation in I, aVL along with leads V5-6. (1) In the presented case, the initial ECG record showed the diagnostic findings of high lateral MI, but within the 5 minutes, the second ECG showed findings of inferior MI with the resiprocal changes in lateral leads. Chia et al study shows that ST segment elevation lead II > lead III or lead I ST segment having no depression is the diagnostic criteria of LCX occlusion. Kontos et al study shows ST segment depression in V1-V2 is the diagnostic criteria of LCX occlusion. In the presented case second ECG showed ST segment depression in V1-V5. In summary, there are several ECG criteria for defining the IRA in STEMI but their correspondence is not always precise. In our daily practice, sometimes it is not possible to distinguish the IRA even with the help of ECG and angiographic images. In those circumstances, revascularisation of possible coronary arteries for IRA can be a reasonable approach

Keywords: Alteration, ST segment elevation, acute myocardial infarction.

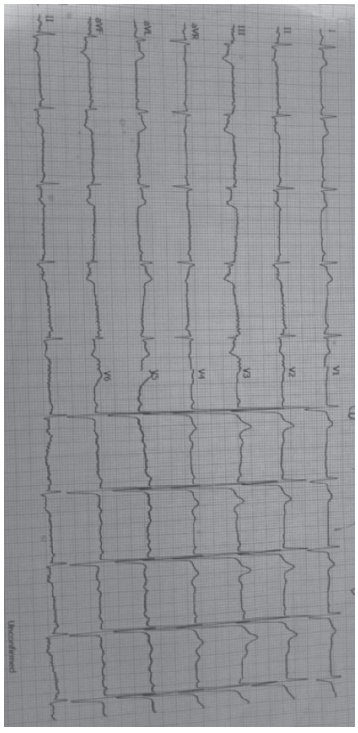

Figure 1. ST-segment elevation in I and aVL with reciprocal ST depression in II, III, and aVF.

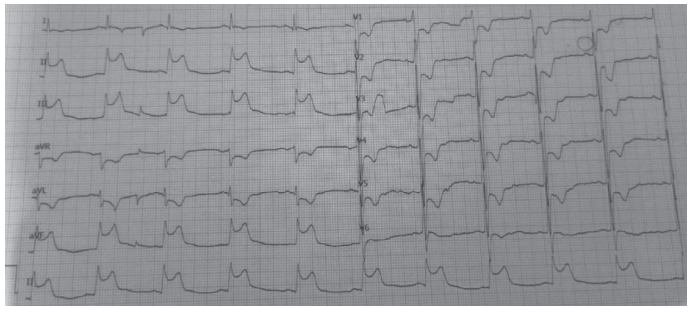

Figure 2. ST-segment elevation in II, III, and aVF with reciprocal ST depression in I, aVL, V1–V5.

SO-97

Excessive protrusion of the stent into the aorta during the percutaneous coronary intervention of osteal saphenous vein grafts and stent retrieved

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Percutaneous interventions of aorto-osteal and graft lesions represents a challenge for interventional cardiologists. In aorto-osteal lesions, incomplete stent expansion, improper placement of the stent and partial coverage of vascular ostium by the stent are the leading causes of osteal stent restenosis. Therefore, to ensure complete coverage of aorto-ostial lesions, stenting of the vessel is performed with the intent to allow slight stent protrusion into the aorta. However, excessive protrusion of the stent into the aorta may lead to increased platelet activation, thrombus formation and risk of distal embolization. A 58-year-old male patient, who had coronary by-pass nine years ago, admitted to the emergency department with a complaint of rest chest pain. On physical examination, he had a pulse rate of 80 beats per minute, blood pressure of 140/90 mmHg. ECG showed sinus rhythm with, pathological q waves in D2, D3 and AVF derivations and ST depression in leads D1, AVL. The patient with positive troponin I values was hospitalized in the coronary intensive care unit with the diagnosis of Acute Coronary Syndrome. The coronary angiography of the patient revealed proximal left descending artery(LAD) and Circumflex was total occluded, the right coronary artery(RCA) proximal was 99% narrowed and total occluded in the mid region, coronary artery bypass graft with a left internal mammary artery (LIMA) graft to LAD was clear, saphenous vein graft to the obtuse marginal branch and RCA were 100%, 98% narrowed osteal saphenous vein graft to the diagonale (Figure 1). Percutaneous coronary intervention performed to saphen graft between aorta and diagonal artery lesion. 6 Fr Judkins Right used for the with a guiding catheter. The lesion wired with 0,014 inc floppy wire. Predilation was performed with 2.5x10 mm PTCA balloon. During the implantation of 4.5x16 mm bare-metal stent, almost two-third (proximal part) of the stent was protruded into the aorta due to the sudden movement of the patient (Figure 2). Stent balloon was deflated and pulled out of the catheter. Further imaging clarified that the stent proximal was protruded to into the aorta. The stent balloon was inflated inside the stent through the first guide wire in the main lumen at high pressure to jail the other wire. The stent was pulled back to the aorta by passing through the proximal struts in by using another 0,014 inc floppy wire. The entire system was successfully pulled out and the stent was secured by to the femoral sheath (Figure 3). Since large stent increased the risk of damage to the femoral artery, arteriotomy was performed by the cardiovascular surgery department under local anesthesia using a femoral cut down method. The patient was taken to coronary angiography laboratory again in another session. 6 Fr Judkins right positioned with a guide catheter. Lesion was passed by 0,014 mm inch floppy wire. 4.5x16 mm bare-metal stent was implanted and full patency was achieved (Figure 4).

Keywords: Protrusion of the stent, osteal, aorta.

SO-98

The reccuren acute stent thrombosis in the patient with factor V leiden mutation

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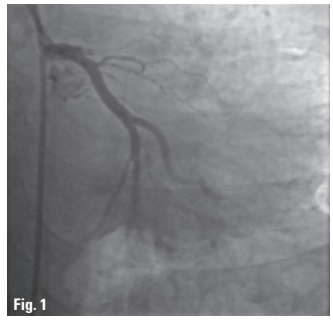
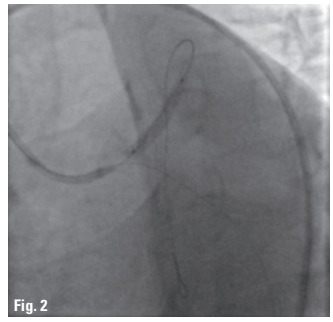
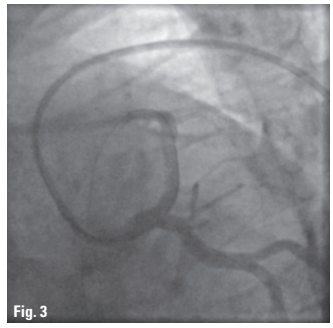
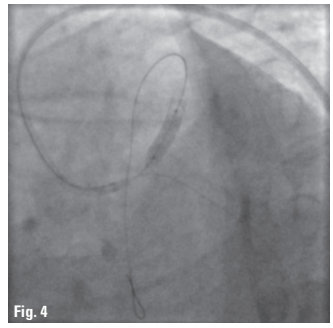
A 25-year-old male patient without known cardiovascular risk factors presented with chest pain for 18 hours. The ECG showed poor R progression in V1 through V4. The first troponin was normal (1 pg/mL) but second was measured 864 pg/ml. Transthorasic echocardiography revealed that the apex of left ventricle was severe hypokinetic. The coronary angiography showed totally occluded left anterior descending artery (LAD) from the ostia and normal right coronary and circumflex artery (CFX) (Figure 1). Ticagrelor and asetly-salisilic asit and heparine (IV, 10.000 IU) were given. After predilatation, the drug eluting stent was implanted in LAD ostia (Figure 2). Postdilatation was perfomed. Short after the postdilatation, thrombus in the stent was noticed (Figure 3). Bare metal stent was implanted inside the first stent. Just after completing LAD stent procedure (Figure 4), thrombosis devoloped in CX ostium (Figure 5). Balloon predilatation and a bare metal stent were performed from LMCA to CX ostium (Figure 6). Balloon dilatation was performed CFX stent struts towards to LAD. Procedure completed with minimal thrombus in LAD stent with TIMI II-III flow (Figure 7) and no thrombus with TIMI 3 flow in CFX ostium. In addition to ticagrelor, tirofiban perfusion continued for 18 hours. Angiography 24 hours after the first procedure showed TIMI III flow with completly dissolved thrombus in LAD and CFX. The patient was referred to hematology and discharged 7 days after the admision. One month after the first procedure, coronary angiography showed TIMI 3 flow in LAD and CFX (Figure 8). He was diagnosed that he had factor V Leiden mutation. Ticagrelor was stopped and warfarin in addition to antithrombotic therapy including asetlysalisilic asit and clopidogrel was started.

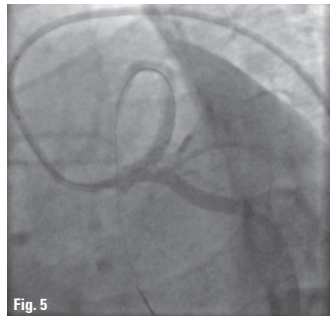
Keywords: Acute coronary syndrome, acute stent thrombosis, factor 5 Leiden mutation.

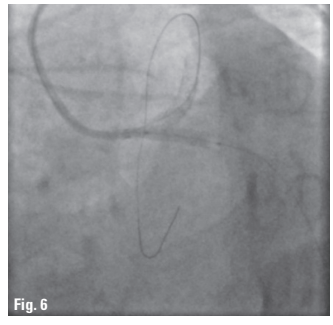












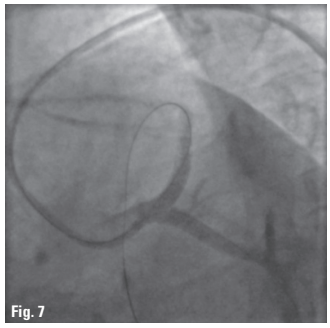


Fig. 7

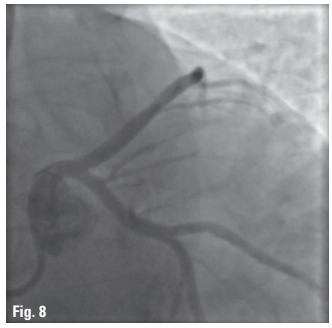


Fig. 8

SO-100

Alternative methods to overcome the challenging anatomy during the percutaneous mitral annuloplasty procedure

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A 74-year-old female with ischemic heart failure with NYHA class III dyspnea was referred to our clinic. Despite the optimal medical treatment, the patient was stil syptomatic. ECG showed normal sinus rhythm. There were left ventricular dilatation, very poor LV systolic function (ejection fraction 15%), left atrium was 53 mm and severe funtional mitral regurgitation (FMR) on transthoracic echocardiography. Similarly, TEE showed severe FMR with a dilated mitral annulus measuring 49 cm, vena contracta of 10 mm, and no structural abnormality of the mitral valve apparatus. Because of the high surgery risk, heart team of our institute decided to implant the percutaneous mitral annuloplasty device with the Carillon system to the patient. The procedure was done with local anesthesia. Venous access is obtained with a 10 Fr sheath in the right internal jugular vein. The venous phase of the left coronary angiogram was used as an angiographic guide for coronary sinus (CS) ositum location. Afterwards, we tried to cannulate the CS using the standard techniques of telescoping system of the 9 F delivery catheter, 6F MPA-1 diagnostic catheter, and 0.035" hydrophylic guidewire. Despite many attempts, we did not succeed to cannulate the CS ostium with this equipment. Mostly probably due to the highly dilated right atrium, the delivery catheter did not provide the support and direction that we needed. As an alternative method, we tried to cannulate the CS with a 6F diagnostic AL-1 catheter through delivery catheter giving slightly contrast and we succeeded. However, this time, we also experienced difficulty advancing the delivery catheter over the diagnostic catheter within the mid-segment of CS, possibly again due to the dilated right atrium and thereby insufficient support of delivery catheter. The balloon-assisted tracking technique was used to maintain the procedure. The 0.035" hydrophylic guidewire was retrieved, and a 0.014" coronary angioplasty guidewire was advanced through the delivery catheter. Then, a 3.0 X 20 mm coronary balloon was inflated to 8 atm (half inside and half prolapsing outside the tip of the delivery catheter), and subsequently, the delivery catheter was easily advanced to the distal end of the CS (closer to the GCV/AIV junction). The process was then carried out in a standard manner. After the venography with marked pigtail catheter as a scaling device, an appropriately sized implant (CARILLON Mitral Contour System, Cardiac Dimensions was selected. An adequate tension with the traction of the delivery system was fascilitated the plication of the perimitral annular tissue and thereby, resulted in a decrease in the degree of MR on echocardiography. Before completion of the procedure, coronary angiography was performed to ensure lack of any coronary artery compression by the device. The proximal and distal anchors of the device were released into the CS with enough plication.

Keywords: Percutaneous mitral annuloplasty, challenging anatomy, balloon assisted technique.

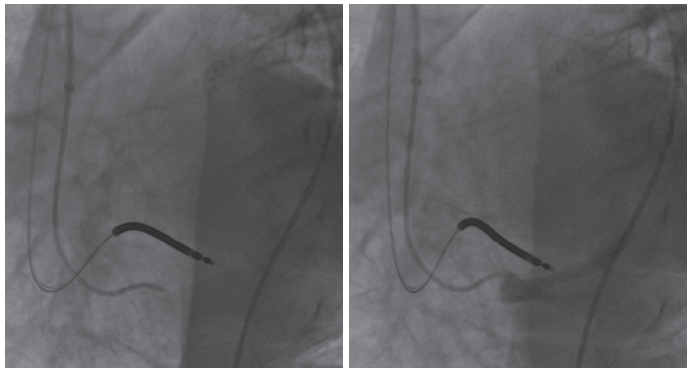
Figure 1. Cannulation of the CS with a 6F diagnostic AL-1 catheter through delivery catheter giving slightly contrast.

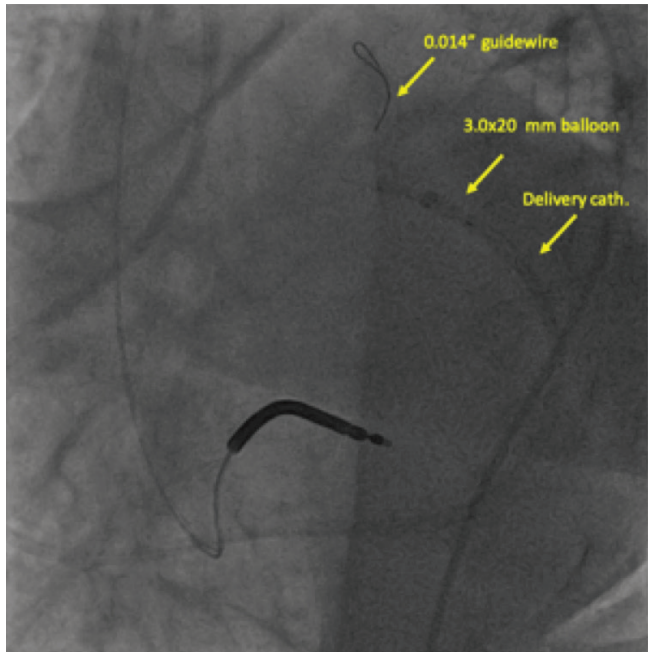

Figure 2. Advancing of delivery cathater with ballon assisted technique.

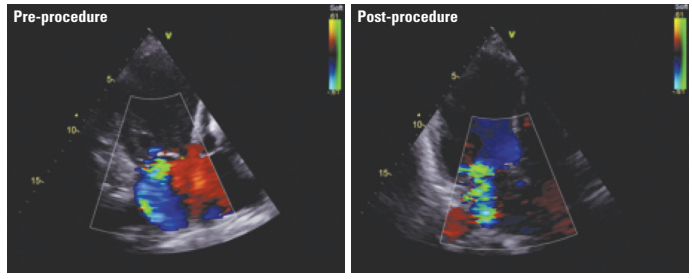

Figure 3. Echocardiograpy, pre-procedure and post-procedure.

SO-101

A case of fistula between the large right coronary artery and the left atrium

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Congenital coronary fistulas are rare in adult. It occurs in one of the 50000 live births. The incidence is approximately 0.25-0.5% in various angiography series. Most of the patients are asymptomatic and they diagnose incidentally. Coronary artery fistulas connect to the right heart structures in approximately 90% of cases. They are rarely associated with the left atrium and left ventricle. In this report, we present a case who admitted to the emergency department with chest pain, was hospitalized with the diagnosis of acute coronary syndrome due to troponin positivity and had fistulized coronary artery from the right coronary artery to the left atrium which demonstrated by coronary angiography.

Keywords: Coronary fistulas, large right coronary artery, angiography.

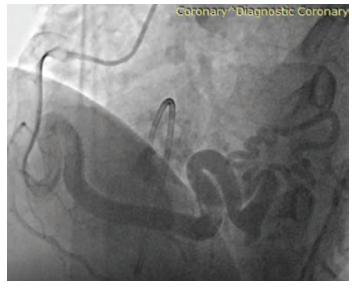

Figure 1. Dilated RCA and coronary cavity fistula.

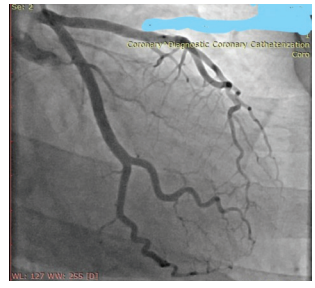
Figure 2. Left coronary system is normal.

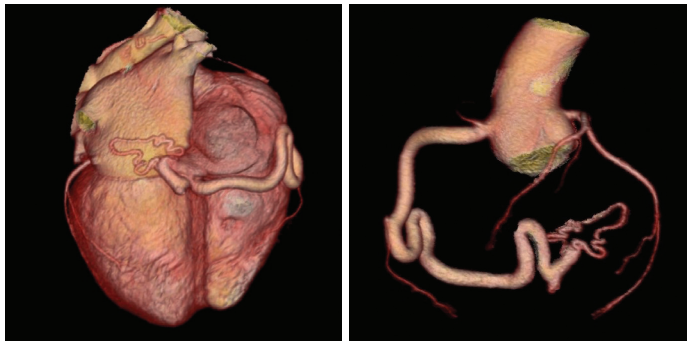

Figure 3. The right coronary artery was large (approximately 9 mm), progressed towards the AV-grooved posterior and opened to the left atrium just below the pulmonary veins.

SO-102

Management of a patient who developed infective endocarditis in the early postoperative period after the TAVI procedure

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A 86 years-old male was referred to our clinic. Severe AS was diagnosed as a result of the cardiology consultation, while hospitalized in the nephrology clinic with the diagnosis of acute on chronic liver failure. Echocardiography revealed severe Aortic Stenosis. (Pgmax/mean: 65/45 mmHg; AVA: 0.8 cm^2), LVEF 55%. After the evaluation of the heart team, TAVI was decided. Corevalve Evolut R 29 mm was implanted successfully and discharged on the 6th day after the procedure. He presented with fever and cough 25 days after the procedure. CRP: 108; ESR: 103; WBC: 9000. The patient was hospitalized and ceftriaxone and metronidazole therapy was initated. Blood culture was positive (Gram positive coccus - methicillin resistant). The treatment was revised and Vancomycin started. A thcikness at the aortic valve left coronary cuspis – mitral anterior leaflet neighborhood and a jet regurgitant flow towards the left atrium was detected at echoardiography. And CT angiography was performed and revealed that thickness and nodularity at the mentioned neighborhood and a defect of approximately 6 mm diameter on the anterior mitral leaflet was reported. Nevertheless, the density can be compatible with thrombus. Thus, a leukocyte scintigraphy was performed and revealed the Low activity involvement which is not characteristic but it is suspicious of infection. Repeat echocardiography revealed an increase in regugitant jet flow. Vancomycin treatment was stopped on the 45th day. During this period blood culture taken 3 times was also negative. Surgery was recommended 2 times, but the patient refused. Upon this, the patient was discharged with Ciprofloxacin + sodium fusidate oral treatment. At 1-week control after the discharge CRP was 162; ESR was143; and WBC: 6300. Destruction at the valve and regurgitant flow were significantly increased even it can be displayed with TTE. This time patient accepted the surgery. At surgery, the implanted Corevalve Evolut R was retrieved. A destructed area and 1 cm^2 diameter extending from the non-coronary cusp line to the anterior mitral valve was observed. This area was closed with a pericardial patch. Edwards Intuity (no: 25 mm) sutureless aortic valve was implanted. Intraoperative TEE examination revealed another defect and regurgitant flow in the anterior aspect of the mitral valve was observed, so it was decided to re-cross-clamp the patient. The patient underwent left atriotomy. However, mitral valve could not be evaluated clearly due to poor anterior leaflet exposure and then the left atriotomy was closed. Infective endocarditis can be seen in the early postoperative period after TAVI procedure. Firstly, it is necessary to distinguish whether it is a mechanical damage secondary to the TAVI valve. Repeat echo follow-up, CT angiography and leukocyte scintigraphy should be considered. Although effective antibiotic therapy can partially control infection markers, surgical correction seems to be more reasonable.

Keywords: TAVI, infective endocarditis, early postoperative period.

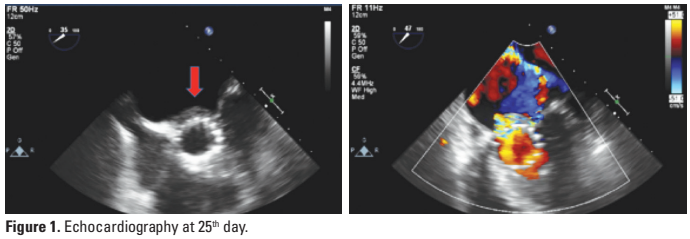

Figure 1. Echocardiography at 25th day.

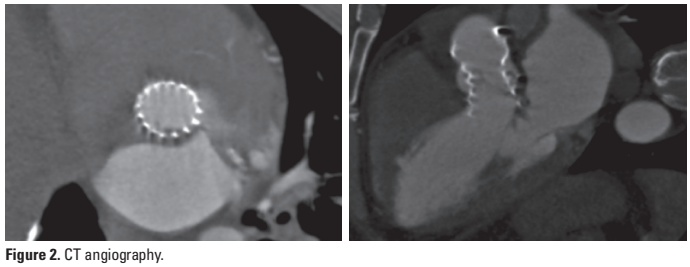

Figure 2. CT angiography.

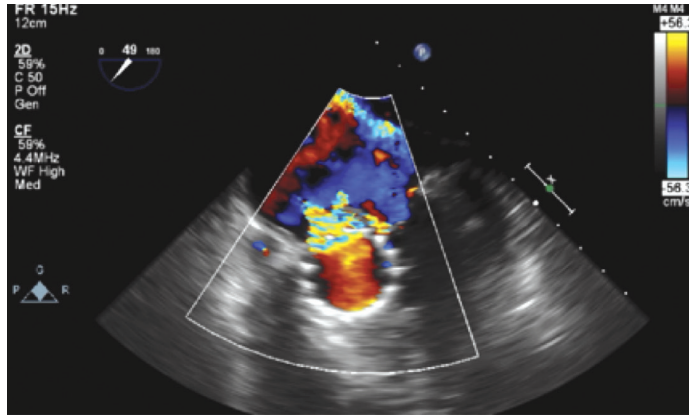

Figure 3. Echocardiography at 40th day.

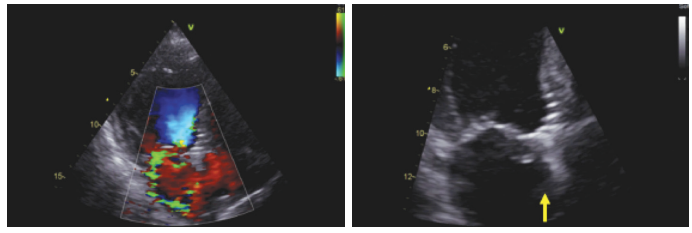

Figure 4. Echocardiography at 48th day.

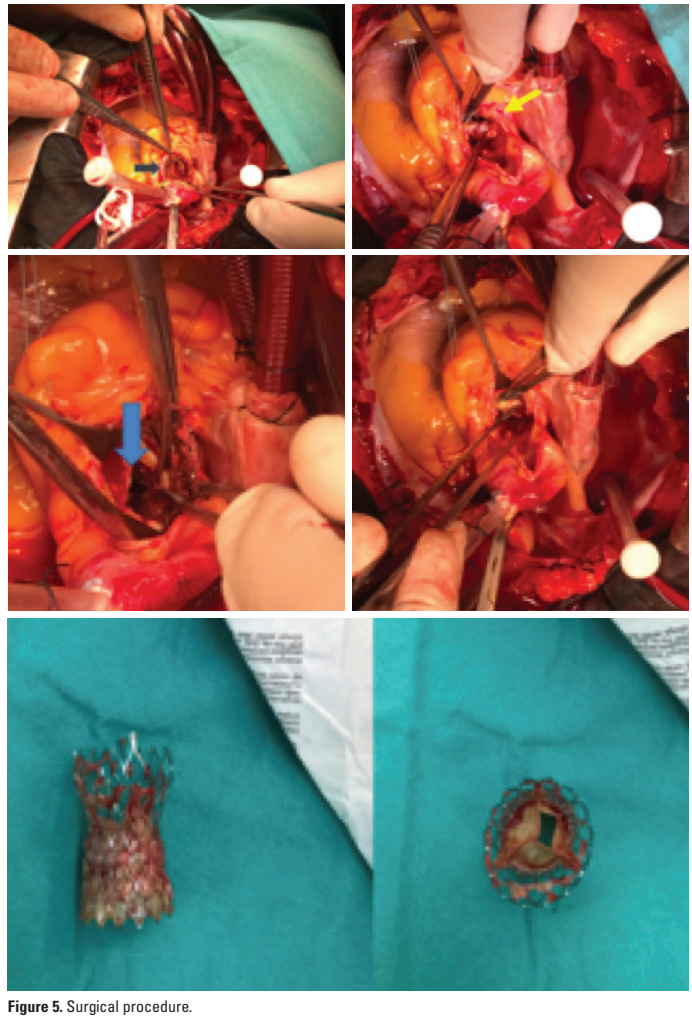

Figure 5. Surgical procedure.

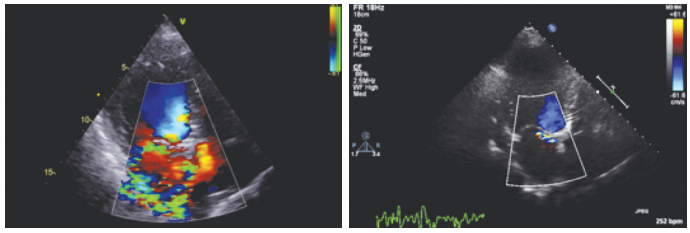

Figure 6. Comparison of pre- and post-procedural echocardiography.

SO-104

A series of unfortunate events: Atrial septal defect closure in a patient with dextrocardia and situs inversus totalis

Erkan Yıldırım, Uygar Çağdaş Yüksel, Ayşe Saatçi Yaşar, Ardi Rreka, Mustafa Köklü, Suat Görmel, Serkan Asil, Salim Yaşar, Barış Bugan, Serkan Yener, Hasan Kutsi Kabul, Cem Barçın

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A 26-year-old woman presented with the complaints of dyspnea on exertion and palpitations. A routine physical examination revealed a right-sided cardiac apex.TTE showed dextrocardia and secundum ASD with moderately enlarged right chambers. TEE revealed a 22 mm secundum ASD with sufficient rims except for the deficient aortic rim (Figure 1). A CT angiography also performed. Therapeutic options were discussed with the patient and she decided to proceed with percutanous closure.

Procedure: Procedure was done under general anesthesia with guidance of TEE. Even though the ASD was a large one, crossing the defect was very difficult due to abnormal orientation of the interatrial septum and other cardiac structures. After several attemps we crossed the defect and the guidewire was parked in the pulmonary vein. However after a short while, TEE operator noticed a lineer thrombus on the right atrial side of the guidewire which provoked us to end the procedure. The patient woke up uneventfully but refused any kind of second intervention and she was discharged. One year later she came back to our hospital for giving a second chance to percutaneous closure. During the second procedure every step was uneventful until the device deployement. Our initial device was a 24 mm Amplatzer septal occluder but this device could not grip the septum and fell into LA during the Minnesota maneuver. Then a 28 mm Amplatzer septal occluder delivered to the defect with a successful Minnesota maneuver. However the device was mushroom shaped rather than disc which is an indicator of an oversized device. This was possibly the result of an elliptical defect. After discussion with the colleagues and surgeons for a while, we decided to retrieve the device back and refer the patient to robotic surgery. The patient underwent a successful robotic ASD closure. But unfortunately the story did not end here. Her follow up for 4 weeks, 3 months, and 6 months after the procedure were uneventful. However at the 1-year follow-up, she was admitted our hospital with 36 weeks of gestation and TTE revealed huge mobile mass with a diameter of 24*25 mm attached to right atrium wall (Figure 2). The patient was hospitalized and consulted with cardiovascular surgery and gynecology and obstetric. The council decided to do simultaneous caesarean section and cardiac surgery. After the caesarean section a healthy baby was delivered and the cardiac mass in the right atrium was excised. The pathological examination of the material was fibrin formation (Figure 3). The patient consulted with hematology due to possible thrombophilia however it was resulted with no definitive diagnosis and she was discharged with rivaroxaban 20 mg 1*1. Our case highlights the technical difficulties encountered during device closure of ASD in a patient with dextrocardia. Attention should be paid to the abnormal orientation of cardiac structures.

Keywords: Atrial septal defect, dextrocardia, situs inversus totalis.

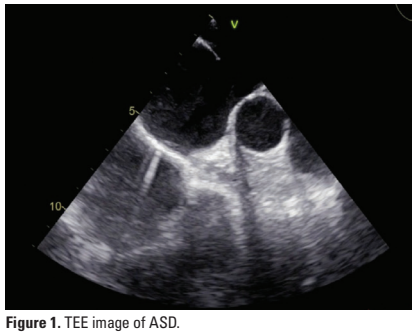

Figure 1. TEE image of ASD.

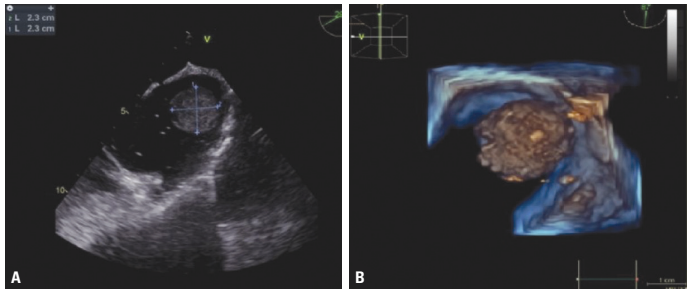

Figure 2. TTE revealed huge mobile mass with a diameter of 24*25 mm attached to right atrium wall.

Figure 1. The pathological examination of the material was fibrin formation.

SO-105

Asymptomatic Isolated Arcus Aortic Dissection: A Peculiar Case

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We hereby represent a case of a chronic arcus aortic dissection in a 69 years old male who was diagnosed incidentally during cranial computed tomography (CT) angiography scan screening due to transient ischemic attack. Due to asymptomatic nature, size and a follow up period of one and six months with no noticeable changes, we recommended medical follow up of every six months with thorax CT angiography scan.

Introduction: In cardiovascular surgery, aortic dissection is one of the emergency and dramatic pathologies associated with high morbidity and mortality. Aortic dissection is generally suspected based on a patient's history and physical examination. Patients with an aortic dissection presents with severe, sharp or 'tearing' back pain. Asymptomatic aortic dissection has been reported but it is relatively rare. Patients with painless dissection are generally have a history of diabetes mellitus and mostly presents with symptoms like syncope, stroke or heart failure. Asymptomatic aortic dissection has been associated with high mortality in compared with symptomatic aortic dissection. To the best of our knowledge no case has been reported with asymptomatic isolated arcus aortic dissection.

Case Presentation: A 69 years old male patient was presented to a neurologist with transient ischemic attack (TIA). A cranial CT angiography was taken for diagnosis. He was incidentally identified to have a dissection within the arcus aorta on cranial CT one week after presentation (Figure 1). He was referred to cardiology department for further diagnosis and treatment of a dissecting arcus aorta. His past medical history included hypertension. Also, he had history of coronary angiography ten years ago and ablation for arrhythmia three years ago. Cardiac examination was performed. Routine investigations were within normal limits. His physical exam showed a heart rate of 86 bpm, blood pressure of 140/80 mmHg, respiratory rate of 13/minute, oxygen saturation of 98% with no pathological sign in examining. An electrocardiogram showed a normal sinus rhythm. Cardiac echocardiography was performed. Echocardiography revelaed normal left ventricle function with mild hypertrophy, and ascending aorta was 39 mm with no sign of dissection. Due to asymptomatic isolated arcus aortic dissection with mild dilatation of ascending aorta of 39mm, a heart team council recommended medical follow up for a period of one month. Cranial branches and upper extremity branches of aorta were not involved. During follow up period of one month a Thorax CT angiography scan was taken and no changes were observed within an isolated dissecting arcus aorta (Figure 2, 3). Lastly, there was no change in dissecting arcus aorta at six month's thorax BT angiography (Figure 4).

Keywords: Aortic dissection, cerebrovascular event, coronary angiography.

Figure 1. Cranial CT angiography scan showing a dissection of arcus aorta.

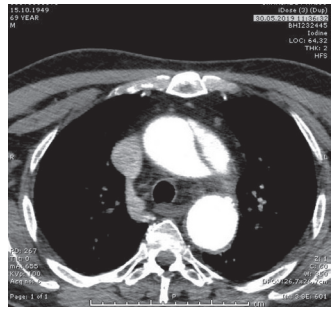

Figure 2. Thorax CT scan showing dissection of arcus aorta during follow up period.

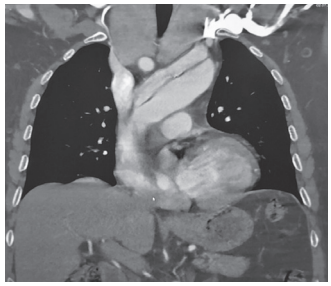

Figure 3. Thorax CT scan showing dissection of arcus aorta at one month in different view.

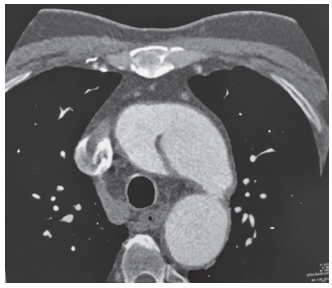

Figure 4. Thorax CT scan showing dissection of arcus aorta at six month follow up period.

SO-108

TAVI vascular complication: Rupture of femoral pseudoaneurysm immediately after manual compression

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A 88 years-old, male with a history of DM (Insulin + OAD), HT (CCB + ACEI + BB) was admitted our outpatient clinic. His functional capacity was NYHA Class III. On his physical examination, S1 + S2 rhytmic, 3/6 crescendo-decrescendo systolic murmur heard at aoric area. ABP: 125 / 80 mmHg; pulse: 75 bpm; and SpO_2: 98%. Echocardiography revealed severe calcific aorti stenonsis (PG max/mean: 79/58 mmHg; AVA: 0.8 cm^2; AVAi: 0.45 cm^2) and mild to moderate aortic regurgitation. His STS score was 4.9% and our heart team decided TAVI. A 34 mm CoreValve Evolut R was successfully implanted. Vascular access sites in both groin was successfully closed with a proglide vascular closure devices. On the 6th day after the TAVI procedure, we found swelling in the right groin region. A superficial tissue ultrasound was performed and revealed a pseudoaneurysm with a diameter of 25 mm associated with right CFA. Afterthat, we decided to apply manual compression in the right groin. Unfortunately, 20 minutes of manual compression, the patient had severe pain and swelling in the scrotal area. An immediate CT angiogram was performed and revealed the rupture of femoral pseudoaneurysm and associated scrotal hemotaoma. Hemodynamic status of the patient was stable. After consulting with cardiovascular surgery, we decided to treat the rupture of femoral pseudoaneurysm percutaneously. We decided to implant a self-expandable covered stent. We thought that it would be difficult to advance the stent at the aortoiliac junction due to the very stiff shaft part of the covered stent. The right SFA diameter was enough good to perform percutaneous procedure. The right CFA-related pseudoaneurysm was successfully closed with a 12x80 mm self-expandable covered stent retrogradely through the right SFA. The SFA access site was successfully closed with a proglide vascular closure device. Control angiography showed no leakage. Then, scrotal hematoma was treated surgically by urologists. Frequency of failure in percutaneous closure of the femoral access site varies between 4.4% -8.7%. Although manual compression is the first and the effective method for femoral pseudoaneurysms, in some cases it may cause unwanted bleeding. The shaft diameter of self-expandable covered stent is not suitable for cross-over antegrade approach. Ipsilateral retrograde approach through the distal SFA might be reasonable, if the vessel diameter is appropriate.

Keywords: TAVI vascular complication, rupture of femoral pseudoaneurysm, scrotal hematoma.

Figure 1. Rupture of femoral pseudoaneurysm complicated by scrotal hematoma.

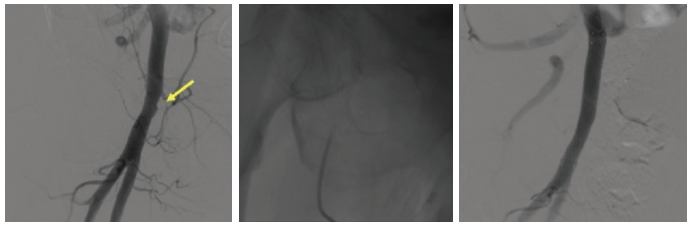

Figure 2. Treatment of the rupture of femoral pseudoaneurysm percutaneously.

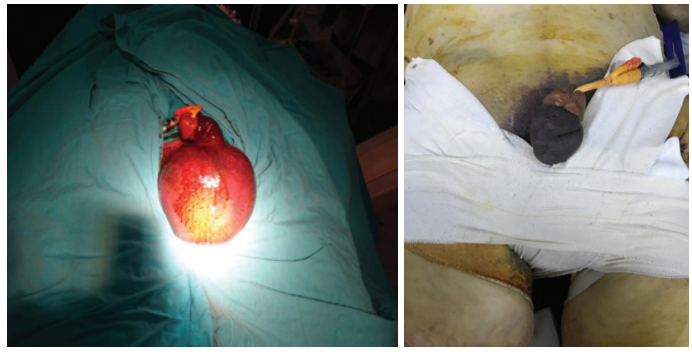

Figure 3. Scrotal hematoma was treated surgically by urologists.

SO-110

The evaluation of NT- pro BNP level in patient with slow coronary artery

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Background: Slow coronary flow (SCF) term refers to delayed progression of contrast dye injected into coronary arteries. The presentation of this phenomenon is enormously diverse ranging from stable angina, acute coronary syndrome, non-sustained ventricular tachycardia (NSVT), and even vague chest discomfort. Histopathologic studies have reported that small vessel disease, and microvascular and endothelial dysfunction may be responsible for the occurrence of SCF. However, there is no clearly acknowledge regarding relationship between SCF and left ventricle systolic dysfunction. NT-proBNP has been demonstrated to be an important diagnostic and prognostic marker in patients with heart failure. This study investigated relationship NT proBNP level and left ventricular function in patients with SCF.

Methods: This study included 50 patients with slow coronary flow in all three coronary vessels (group I, 26 females, 24 males, mean age= 48+/-9 years), and 50 subjects with normal coronary arteries without associated slow coronary flow (group II, 22 females, 28 males, mean age =50+/-8 years). Coronary flow rates of all patients and control subjects were documented by Thrombolysis In Myocardial Infarction frame count (TIMI frame count). Plasma NT-proBNP level was measured in all patients and control subjects using commercially available NT-proBNP kits.

Results: There was no statistically significant difference between two groups in respect to age, gender, hypertension, diabetes mellitus, hyperlipidemia and cigarette smoking (p>0.05). Plasma NT-proBNP level of patients with slow coronary flow were found to be significantly higher than those of control subjects (444.2±32.6, 84.7±21.8 ng/L, respectively, p<0.001). Moreover, we found a significant positive correlation between plasma NT-proBNP level and mean TIMI frame count (r=0.660, p<0.001).

Conclusion: NT-proBNP levels increase in patients with SCF. SCF may impair left ventricular function. NT-proBNP level.

Keywords: Slow coronary artery, NT-proBNP, left ventricular function.

SO-116

Calcification, aneurysm and thrombus caused by prolonged pulmonary atherosclerosis in the advanced age Eisenmenger Complex

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Ventricular septal defect (VSD), which is the most common congenital cardiac anomaly in live births, constitutes only one tenth of the congenital heart diseases detected in adults since it exhibits spontaneous closure in most patients. The most common type of defect in terms of localization is perimembranous and is classified as clinically and hemodynamically small restrictive, moderate restrictive, large nonrestrictive, residual post-closure. Eisenmenger Complex refers to the reversal of the shunt (right-to-left) as a result of increased pulmonary vascular resistance in the uncorrected cases with nonrestrictive VSD. The size of the shunt and the type of defect is directly related to the development of the Eisenmenger Complex. The term 'complex' is valid only in the presence of VSD and pulmonary arterial disease can develop as a result of other uncorrected congenital heart pathologies, and when the cyanosis with phenotypic reflection is added, the triad of pathology is expressed as Eisenmenger Syndrome. A 56-year-old male patient admitted to us with complaints of shortness of breath was diagnosed with Eisenmenger Syndrome developed on the background of VSD 20 years ago and was not operated. The patient, who had no history of drug use and had signs of loading on the chest radiograph, was admitted to our clinic with a congestive heart failure table. Membranous type Ventricular Septal Defect was observed in transthoracic echocardiography. The patient underwent coronary angiography with right heart catheterization. In the patient with normal coronary arteries, the mean pulmonary artery pressure was measured as 75 mmHg and the Qp / Qs ratio was calculated as 0.8. In computed tomography evaluation, the membranous type Ventricular Septal Defect, measured 16.5 mm in the interventricular septum, was observed. The severely calcified truncus pulmonalis 45 mm, right main puloner artery 35 mm, left main pulmonary artery 28 mm were measured. Filling defects compatible with embolism were observed in both pulmonary artery branches. The patient with atrial fibrillation and pulmonary embolism was anticoagulated. In terms of modification of endothelial dysfunction, specific treatment of pulmonary arterial disease was planned and followed up. As a result of chronic cyanosis, antiatherogenic substrates are released in the systemic arterial circulation, as a result of which systemic blood circulation, including coronary arterial circulation, increases significantly. Interestingly, pulmonary arterial circulation is not protected from atherosclerosis and thrombosis. These patients show an aggressive atherosclerotic process in the pulmonary vascular bed, consistent with the duration of pulmonary hypertension. The profile of a patient who lives for a long time without using medication after diagnosis of Eisenmenger Syndrome and has calcification with the dilated main pulmonary artery is rare.

Keywords: Advanced age, calcification, eisenmenger complex, pulmonary arterial disease, ventricular septal defect.

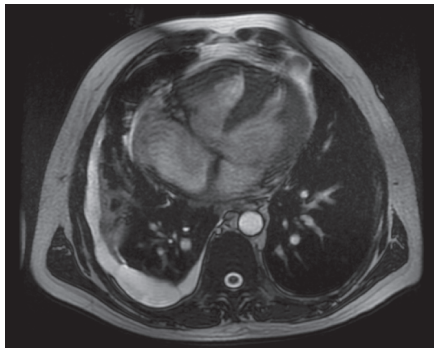

Figure 1. Cardiac MRI.

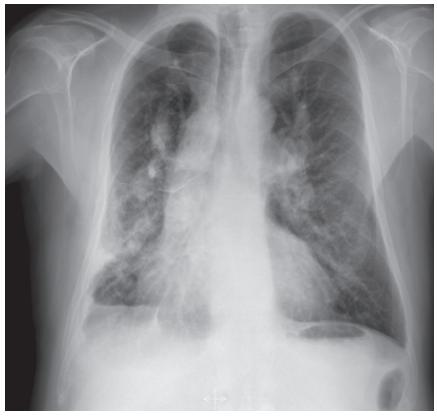

Figure 2. Cardiothoracic ratio appears to increase.

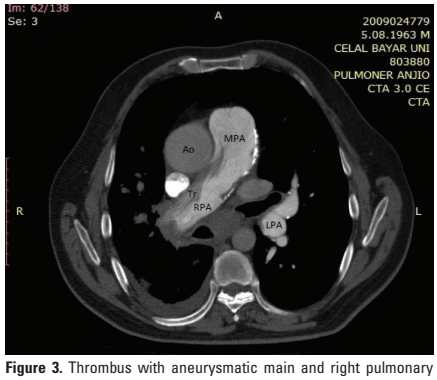

Figure 3. Thrombus with aneurysmatic main and right pulmonary artery. Main pulmonary artery (MPA), Right pulmonary artery (RPA), Left pulmonary artery (LPA), Aorta (Ao), Thrombus (Tr).

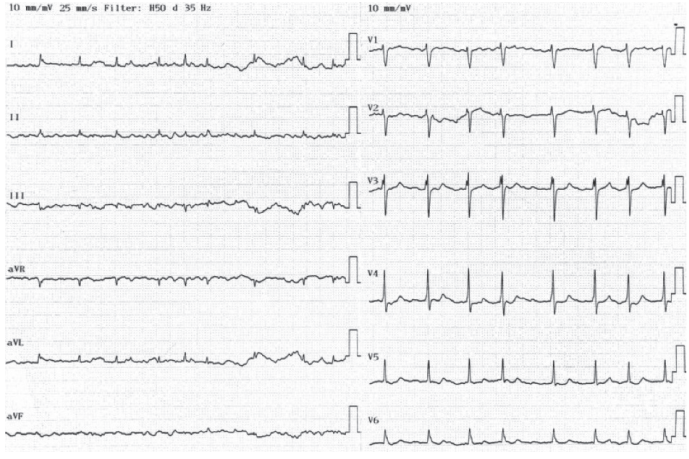

Figure 4. Atrial fibrillation.

SO-117

Prinzmetal angina with resistance to medical treatments; management and treatment

Şükrü Arslan, Ömer Doğan, Cüneyt Koçaş, Ahmet Yıldız, Emir Barış Ökçün

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A 21-year-old female patient admitted with the complaint of typical chest pain. On the electrocardiogram (ECG), diffuse ST segment elevation was observed in the anterior leads. In the coronary angiography (CAG) of the patient, subtotal stenosis was detected in the proximal segment of the left anterior descending(LAD) artery (Figure 1). After intracoronary nitrate, stenosis decreased to 50%. In the control CAG performed, the spasm completely regressed (Figure 2). On echocardiography(ECO), the left ventricular(LV) ejection fraction(EF) was 35%, and the anterior wall of LV was akinetic. After nifedipine and nitrate were added to his treatment, the patient's clinic was remained stable and then she was discharged. Three weeks after discharge, the patient admitted with the complaint of recurrent chest pain. After monitoring ST segment elevations in the anterior leads of the ECG, the CAG decision was made. In the examination of the patient undergoing intravascular ultrasonography, plaque was observed in the spasm region of the lad artery. Despite medical treatments, the patient's clinic was repeated therefore a drug-eluting stent was implanted into the LAD artery proximal. Two antiaggregant agents were added to the treatment. Psychiatric consultation was requested because the patient's symptoms usually occurred after emotional stress. The psychiatrist's started sertraline and hydroxyzine dihydrochloride. The patient presented again with chest pain and ECG diffuse st segment depression after one week. The patient who symptoms did not regress with IV nitrate was taken again to CAG. In CAG, extensive spasm was detected in the left main coronary artery, after intracoronary nitrate spasm regressed (Figure 3). In this hospitalization, internal medicine, endocrine and rheumatology were consulted for possible non-cardiac causes, but no significant pathology was found. The patient was discharged by adding ranolazine and trimetazidine to the patient's current treatment. The patient admitted with chest pain that developed after emotional stress one month after discharge. Symptoms were decreased with IV nitrate. Nicorandil was added to his current treatment at this hospital stay. The patient has been followed up asymptomatically for one year after adding nicorandil therapy. LVEF was 50% in the last control. Vasospastic angina; It is a rare form of coronary artery disease with typical chest pain and ischemic ECG changes. Although its response to medical treatment is often good, it is rarely encountered with resistant cases. Some treatment methods(stent implantation, ganglion blockade) are recommended in patients resistant to medical therapy. Nicorandil is an anti-ischemic agent that causes improvement in symptoms and mortality on resistant case when added to other treatments in patients with angina. In this case, we managed to control symptoms with nicorandil in a patient with vasospastic angina that could not be controlled despite multiple anti-ischemic treatment.

Keywords: Vasospastic angina, nicorandil, coronary artery stenting.

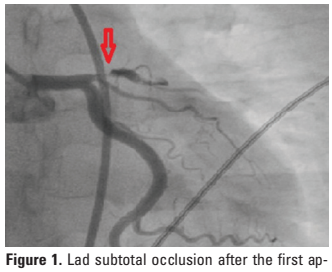

Figure 1. Lad subtotal occlusion after the first application.

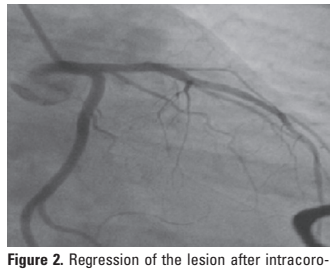

Figure 2. Regression of the lesion after intracoronary nitrate in control KAG.

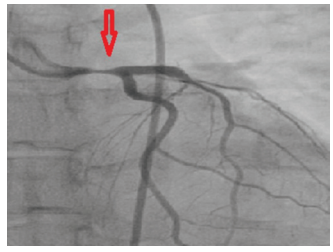

Figure3. Coronary angiography due to recurrent symptoms after LAD stenting.

SO-132

Simultaneous ruptured abdominal aortic aneurysm and acute coronary syndrome: Successful endovascular treatment

Erkan Yıldırım, Muhammed Geneş, Hatice Taşkan, Ardi Rreka, Samir Adıgözelzade, Serkan Yener, Özkan Eravcı, Sadık Karpat, Yasin Gürdal, Ozan Köksal, Uygar Çağdaş Yüksel, Cem Barçın

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A 70-year-old gentleman was admitted to our emergency department with abdominal and back pain. In his past medical history, he had CABG surgery (17 years ago) and abdominal aortic aneurysm. He had previously been diagnosed as having an asymptomatic infrarenal AAA, for which the diameters did not reach surgical limits. During admission, the patient developed further abdominal pain and hypotensive episode and a CT scan was performed. The scan revealed an infrarenal AAA with contained rupture. Active extravasation of contrast medium was not noted from the aneurysmal sac. Initially the patient

was considered fit for open surgery and hospitalized at cardiovascular surgery intensive care unit. However, after a short while the patient developed severe chest pain with dynamic ECG changes and positive cardiac markers consistent with ACS. As a result our strategy was revised and simultaneous percutaneous coronary intervention and EVAR was planned.Initial coronary angiography revealed osteal 99% stenosis in the Ao-Om2-SVG, and after having several difficulties in terms of engaging the SVG, crossing the lesion and the positioning the stent a 4.0 * 12mm DES was successfuly implanted after predilation with a 3.0 * 12 mm coronary balloon. (Figure 1). Because of the hostile iliofemoral anatomy, our access strategy was surgical cut-down for bilateral common femoral arteries. Angiography showed an infrarenal AAA without extension into the common iliac arteries. With the help of a stiff guidewire, the bifurcated device (Endurant II Stent, Greft Systems, Medtronic) was placed with the proximal markers at the infrarenal level. After controleral leg side was crossed with a wire, the greft stent was placed proximally in the main body and distally to the main iliac artery. A completion angiogram suggested a proximal type III endoleak and postdilations were performed (Figure 2). Post deployment angiography showed complete exclusion of the aneurysmal sac, with no further endoleak or extravasation of contrast medium and preservation of both internal iliac arteries. The patient was discharged with medical treatment after 5 days of follow-up and on 6 month clinical follow up, the patient is alive and doing well, with no complaints related to his AAA.

Discussion: AAA rupture can result in haemodynamic collapse and death before the patient reaches hospital. In slow ongoing contained leaks, the patient presents with abdominal pain, pulsating abdominal mass, falling blood pressure and haemoglobin. EVAR is a minimally invasive procedure with a potentially reduced morbidity and mortality. Even though the open surgical repair still remains the treatment of choice in haemodynamically unstable patients with ruptured AAA, we have demonstrated that endovascular therapy might be a good option especially the situation is complicated with ACS and you already have to perform PCI.

Keywords: Ruptured, abdominal aortic aneurysm, endovascular treatment.

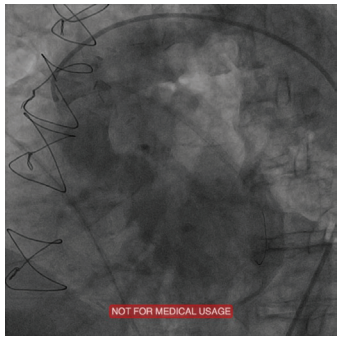

Figure 1. 4.0*12 mm DES was successfully implanted.

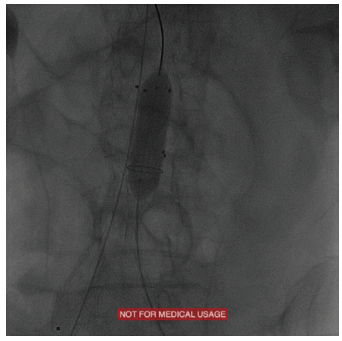

Figure 2.

SO-135

Complex PCI Procedures, in a patient with cardiogenic shock and severe pulmonary infection

Mahmut Cakmak, Krenare Shabani, Dorina Gashi, Drilon Ahmetaj

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Cardiogenic shock complicates approximately 5–10% of all MI events and remains the most common cause of death among MI cases. Over the past few decades, the mortality rate associated with cardiogenic shock has decreased with the introduction of early revascularization. Our case is 54-year old Male who came with signs of cyanosis, dyspnea, heavy chest pain, low blood pressure, decreased urination and had severe pulmonary infection. We accepted in our Cathlab, after Coronary angiography a 3 vessel disease diagnosis was established and the main 3 vessels were totally occluded. After that we opened RCA with long procedure and we put four stents and in LAD-D1 one stent. At the same time, we started two parenteral antibiotics. After four days, the patient was clinically better (NYHA III ◇ NYHA I). Laboratory findings (SpO_2 70%-->95%, EF: 20% à 35%).

Conclusion: We concluded that mortality may be reduced by treating non-cardiac causes at the same time.

Keywords: Cardiogenic shock, PCI procedure, severe pulmonary infection.

Figure 1. Chest X-ray after 1 month.

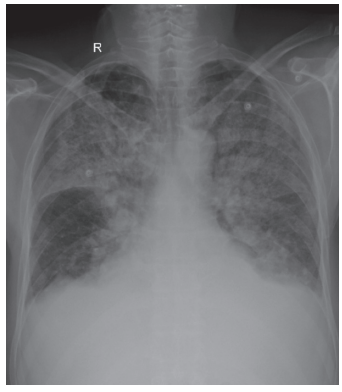

Figure 2. Chest X-ray on presentation.

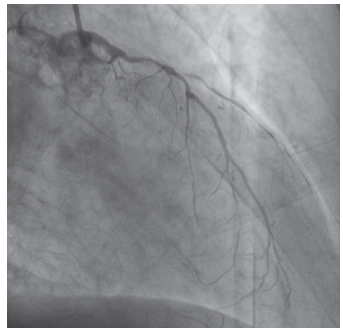

Figure 3. LAD, CX and D1 on presentation.

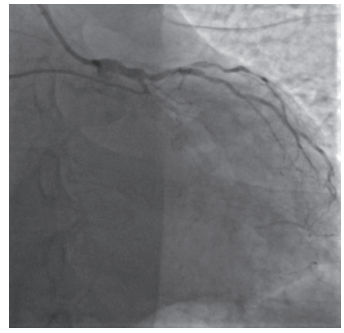

Figure 4. LAD, CX and D1 one month after PCI.

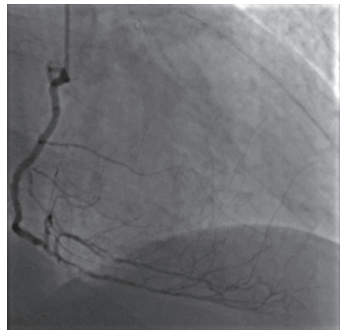

Figure 5. RCA 1 month after PCI.

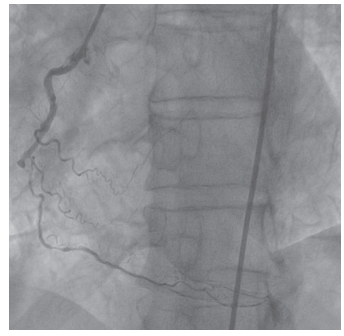

Figure 6. RCA on presentation.

SO-137

The lack of microcatheter injection of diltiazem and adenosine into occurring no-reflow coronary through trombus aspiration catheter

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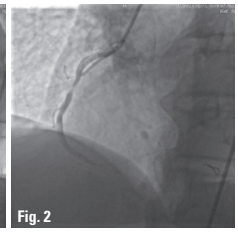
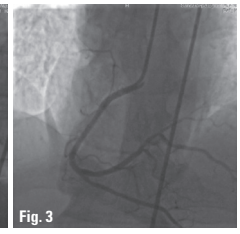
A 65-year-old male with hypertension presented after successful cardiopulmonary resustation. Cardiac arrest developed after he had had chest pain and he was brought to the hospital after successful cardiopulmonary resusitation. ECG showed in ST segment elevation in lead of DII, DIII and aVF derivation and one milimeter ST depresion in lead V5-6. The patient was transferred to catheter laboratory. The coronary angiography revealed as follows: Totally occluded right coronary artery (RCA) along with moderate lesions in circumflex artery (Figure 1). After predilatation, visible thrombus was seen (Figure 2). Thrombus aspiration was performed and a bare metal stent was implanted. The flow became TIMI 0 and blood pressure declined to 60/40 mmhg. Intracoronary tirofiban and adenosine and diltiazem was given. However the flow did not improved. Thrombus aspiration catheter placed in the distal RCA and diltiazem and adenosine were given to distal RCA. The flow became TIMI III and blood pressure quickly rised. Another stent placed proximal to the first stent and postdilatation performed into the region of stent overlap. Coronary angiography showed TIMI III flow without any visible thrombus (Figure 3).The patient transfered to intensive care unit.

Keywords: Adenosine and diltiazem, microcatheter, no-reflow.





SO-141

Successful percutaneous stentting of symptomatic severe left osteal subclavian artery stenosis usage preventing filter into dominant sol vertebral artery with atretic right vertebral artery

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Dominancy of any vertebral artery is frequently situation. Preventing of dominant vertebral artery to posterior perfusion of brain is important during related subclavian artery stentting. We present a case who had atretic right vertebral artery, and had severe sol subclavain artery stenosis with dominant sol verter-

bral artery. We treated percutaneous stentting and prevented sol vertebral artery via filter. 51-year-old woman was admitted with weakness on her left arm. On her physical examination, there was no radial artery pulsation and left arm blood pressure was 80/40 mmHg, rihtg arm blood pressure was 120/80 mmHg. Angiography revealed rigth vertebral artery atresia, dominant left vertebral artey with severe stenosis of left osteal subclavian artery (Figure 1). It was decided treatment via percutaneous intervention. To prevent embolisation to brain, we put filter (Emboshield, Abbott) into dominant sol subclavain artery via left radial artery (Figure 2). Than, we implantated 7x29 mm balloon expansible stent (Xact, Abbott) to left subclavain artery by right femoral artery. It was done osteal flare with stent's balloon (Figure 3). The patient was discharged 2 days later without any complications. As a conclusion; During perctaneous treatment of subclavain artery small particuls may occurs embolisation to brain via dominat verterbral arteryi and sometimes it can lead severe neurological defecits. Thus usage preventing filter is safe and effective in this situation.

Keywords: Subclavian stenosis, stent, filter.

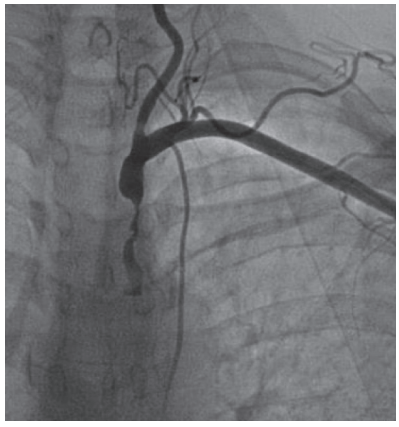

Figure 1. Severe stenosis left osteal subclavain artery stenosis with dominant sol vertebral artery.

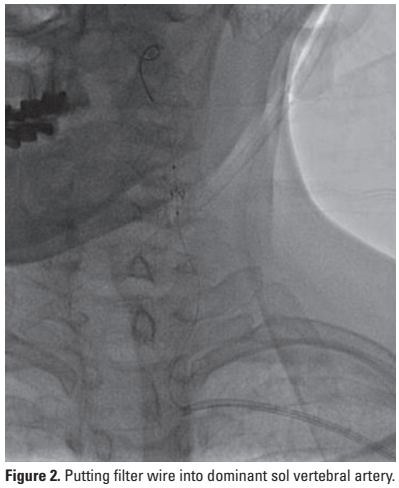

Figure 2. Putting filter wire into dominant sol vertebral artery.

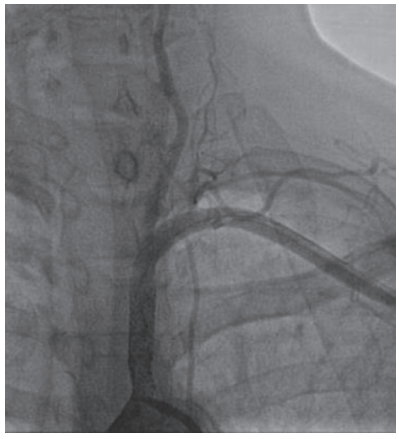

Figure 3. After stentting of left osteal subclavian stenosis without any neurological complication.

SO-144

Adjunctive antiplatelet agents via perforated coronary balloons can be an effective solution in the management of acute myocardial infarctions with high thrombus burden

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Background: The correction of distal coronary flow is vital in the setting of acute myocardial infarctions. High thrombus burden especially in the background of coronary aneurysmal dilatation is an insidious enemy for interventional cardiologists and a possible nominee for the development of no-reflow pattern. Herein this report, we want to present an effective way in fighting with high thrombus burden in the course of acute myocardial infarction.
Case: A 66 years old male patient admitted to the emergency department with syncope. On his admission electrocardiography (ECG) acute inferior myocardial infarction (MI) with complete AV block was detected (Figure 1). Diagnostic coronary angiography was performed emergently with temporary percutaneous pacing lead. The right coronary artery (RCA) revealed aneurysmatic anatomy with global thrombosis, and we performed iterative percutaneous balloon angioplasties with diameters of 3.0 and 4.0mm coronary balloons. We could not be able to achieve a flow than we gave intracoronary tirofiban via a distally perforated coronary ballon for perfusion of distal coronary bed. A TIMI-2 flow appeared following tirofiban bolus, and sinus rhythm was accessed (Figure 2), and we noticed ST-segment resolution on 12-lead ECG. We decided to continue tirofiban infusion and planned a control coronary angiography. On his control coronary angiography, the RCA was still globally thrombosed, but near TIMI-3 flow existed in distal coronary bed. We planned oral anticoagulation for high thrombotic burden in the long term.
Discussion: High thrombus burden is associated with suboptimal distal coronary perfusion and possible no-reflow pattern in the setting of acute myocardial infarction especially. Intracoronary administration of adjunctive antiplatelet agents such as Gp IIb/IIIa antagonists or additional unfractioned heparin dosages can be a solution in fighting with global coronary thrombosis but in most cases optimal coronary perfusion can not be achieved because of the highly organized thrombus burden. In the course of acute myocardial infarction, correction of distal coronary flow is essential and administration of adjunctive antiplatelet agents or even intracoronary adenosine via a distally perforated conventional coronary balloon can be a more effective and cost-benefit way to achieve a better TIMI flow. Care should be given not to cause fragmentation and distal embolization of balloon material during performing perforation procedure. Using a thin, black coloured insuline injector is a suitable way for safe preparation of distally perforated coronary balloon.
Keywords: Myocardial, infarction, thrombus, perforated, coronary, balloon.

SO-145

A rare complication: Late fracture of a supera stent in popliteal artery region

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In this report, we discussed a rare case of supera type peripheral stent fracture. A 60-year-old male patient with a history of diabetes mellitus, presented with wounds on the right lower extremity (Rutherford category 6). The wifi score was an average of three. Three years ago, he had undergone percutaneous transluminal angioplasty (PTA) and a 5.0×120-mm Supera stent was implanted to the totally occluded right popliteal artery. First, we want to perform diagnostic angiography. The patient's angiogram revealed that popliteal artery was totally occluded in stent segment in addition a type 5 stent fracture (Figure 1). We planned to perfom contralateral intervention by anterograde way. for this purpose, we first inserted a 90 cm longsheath (Glidesheath, Terumo) to the left femoral artery. The lesion could not penetrated with a 0.035 inch peripheral support catheter and 0.0,14 wire (Hi-torque, winn 120, Abott) at the fractured stent segment and the procedure was terminated. The percutaneous interventions of the distal Femoral and popliteal artery are challenging procedures for endovascular therapy due to mechanical factors. Stenting of this segment can cause serious clinical problems such in our patient. The fracture rates can be reached 14% in previous stent materials. Unlike any other stent design platform, it is believed that a new generation supera stent is uniquely designed to keep vessels open with High Flexibility and Fracture Resistance and also 2-year opening rate is approximately 80%. Thus, we could notice only 2 case reports associated with stent fracture in the literature. The first was presented at the LINC 2016 congress. It was reported as type 5 fracture at 6th month after implantation. As a rationale, extreme dilatation and strain due to the use of a 6.0 mm balloon catheter was shown for post-dilatation of 5.0 mm stent. Another patient with type 3 fracture was seen after the 12th month of the stenting. Different possible reason is operator's experience because Supera stent system is implanted by an operator dependent system. This is also unlikely for our case, since proper citrate distribution can be seen in post-procedure imaging. In addition, the angiography performed one year after the procedure also shows that the stent is appropriately placed. As a consequence, regardless of breaking mechanism, even in extra-durable metallic structures such as supera stent system, these incidents can occur in traumatic areas, especially popliteal region. by means of this case, we purposed to point out the problem in the popliteal region and even in the selection of suitable stent material and stenting procedure, we may still face serious complications.
Keywords: supera stent, popliteal artery stenosis, stent fracture.

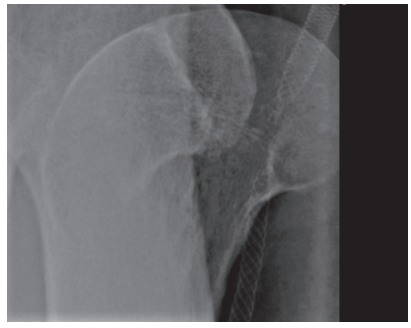

Figure 1. Images showing fractured Supera stent twisting and totally loss of structural integrity at the knee level.

SO-147

Successful treatment of spontaneous perforation of distal branch of internal iliac artery: A novel technique for perforation closure —Cut-inflated-deflated balloon embolization

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Pelvic hematoma due to the distal internal iliac artery (IA) perforation is a rare and life threatening condition if not diagnosed and treated immediately. A 57-year-old woman was hospitalized to neurology department after diagnosed as acute ischemic serebrovascular stroke. The patient was treated with aspirin and enoxaparin. The patient complained of sudden onset abdominal pain and dizziness on the third day of admission. Laboratory studies showed a hemoglobin of 4.9 g/dl and hematocrit 15.5% with normal liver and kidney function. Emergency abdominopelvic ultrasound was planned for the patient because severe hypotension and tachycardia developed. The ultrasound revealed a hypoechoic collection in the suprapubic region compatible with hematoma. Abdominal computerized tomography showed the pelvic hematoma in the laterovesical space with a size of 128x88 mm (Figure 1). Massive bleeding required multiple transfusions and the patient was consulted to our department for emergent endovascular intervention. A 6 Fr sheath was inserted into the femoral artery, and a 6 Fr right Judkins guiding catheter was used to cannulate the left internal IA ostium.The digital substraction angiogram showed the extravasation arising from distal branch of left internal IA (Figure 2). Selective angiogram by using microcathater showed the perforated segment. The lesion was successfully crossed with a 0.014-inch wire under fluoroscopic guidance. Then, the inflated-deflated balloon catheter was cut with a scalpel (Figure 3). The cut-inflated-deflated balloon was advanced into the segment of extravasation with a microcatheter over 0.014-inch wire (Figure 4). The extravasation was completely disappeared after the embolization of the ruptured segment with the inflated-deflated balloon (Figure 5). The patient was transferred to the intensive care unit. The patient was discharged uneventfully on the sixth day after intervention. The rupture of the distal branch of the internal IA is rare and sometimes life threatening condition due to the excessive bleeding. Although various treatment modalities have been reported in the literature, endovascular treatment appears to have emerged as the treatment of choice, especially for hemodynamically compromised life-threatening perforations. Many types of materials are used for embolization of the ruptured segment of the artery, such as coils, vascular plugs, liquid embolic agents. Since we did not have coil and embolic materials in our catheter laboratory, we successfully managed to treat the ruptured distal IA segment using the embolization technique with a cut-inflated-deflated balloon. This method is less costly than coil embolization. Bleeding in the small vessels can be easily controlled with this method. Embolization with a cut-inflated-deflated balloon technique is an easy, inexpensive, effective treatment option for patients with life-threatening artery perforations.

Keywords: Perforation, embolization, balloon.

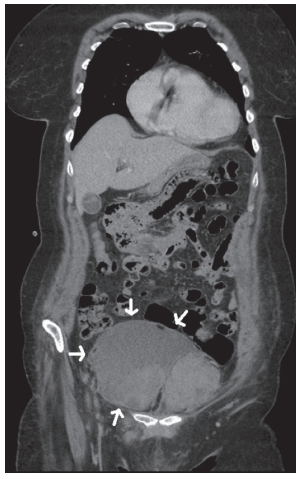

Figure 1.

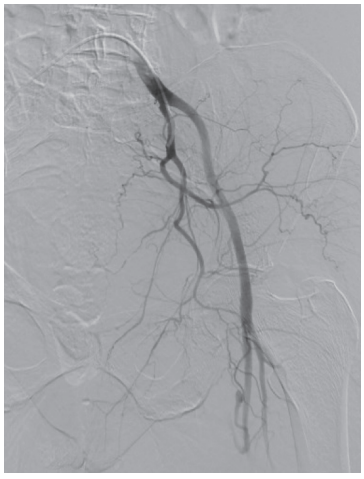

Figure 2.

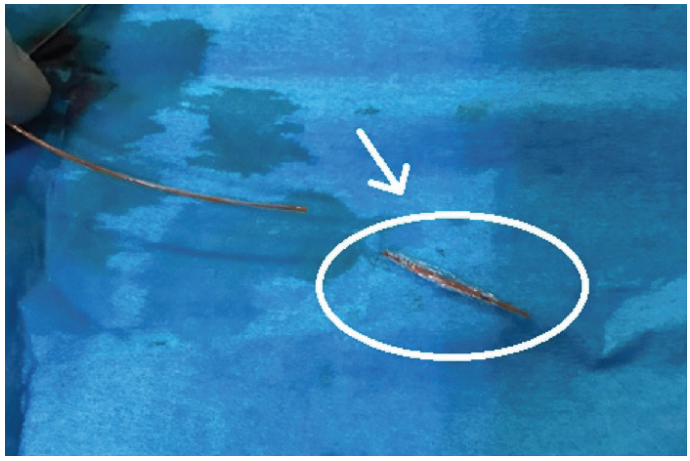

Figure 1.

Figure 4.

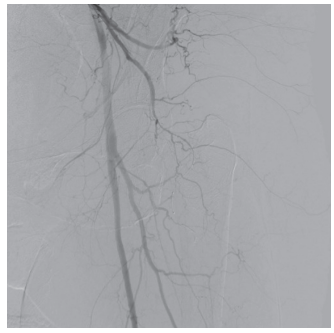

Figure 5.

SO-148

Succesful retrograd approachment of complicated RCA intervention

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A 60-year-old man with hypertension and dyslipidemia pre-sented with inferior ST-segment elevation acute myocardial infarction. Coronary angiography with right transradial procedure revealed that 100% thrombosed lesion in middle right coronary artery (RCA) (Figure 1). LAD and CFX were non-critical. A 6-French JR-4 guide was used to engage the RCA for Primer PCI. A Choice floppy guidewire passed 100% thrombosed lesion, but it wasn't been notice to be the subintimal space. After high-pressure inflation of a 1.5×15 mm balloon, RCA was seen to dissected thoroughout from osteal (Figure 2).The procedure was terminated due to giant subintimal hematoma formation lead to complet true lumen compression and right posterolateral branch filling via trivial epicardial collaterals from the circumflex, and the posterior descending artery via septal mild collaterals from the LAD.Therefore, RCA was left healing. After one month, the patient had Canadian Cardiovascular Society class 2-3 anginal symptoms despite maximally tolerated guideline-directed medical therapy. Coronary angiography revealed total occlusion in RCA with giant subintimal thrombosed formation lead to complet true lumen compression (Figure 3). The right posterolateral branch was filling via mild epicardial collaterals from the circumflex, and the posterior descending artery was filling via moderate septal collaterals from the LAD. Bifemoral access was obtained. A 7-French JR-4 guide was used to engage the RCA, while a 7-French EBU-4 guide catheter was used to engage the LAD.Antegrade crossing was challenging because the proximal RCA segment was very short and dissection flap was beginning from ostium (Figure 4). The mid-proximal RCA was tried to cross with a Whisper MS Guide Wire and follow by advancement of a FineCross catheter into the mid- RCA, but re-attempts were failed due to dense subintimal thrombosed formation. And also because of non-decompressible big subintimal space, re-enter was becoming fail. The retrograde approach was subsequently attempted.The first septal branch was successfully crossed with a Sion black guidewire, followed by advancement of a FineCross catheter into the distal RCA. A retrograde Sion black guidewire was easily advanced into the JR-4 guide. Because of we didn't have externalization wires (RG3 vs.), a Choice floppy guidewire assisting with FineCross catheter was kissed with Sion black guidewire in the JR-4 guide. While Sion black guidewire was been pulling, the Choice floppy advanced into the distal RCA (Figure 5). Then, proximal to distal RCA was dilated using a 2.0×20 mm balloon and two drug-eluting stents were deployed in a distal to proximal fashion (3.0×16 mm, 3.0×28 mm) and were postdilated with a 3.0×20 mm noncompliant balloon at 16–18 atm. Final angiography revealed an excellent result with TIMI-3 RCA flow, and no residual stenosis (Figure 6). Approximately 500 cc of contrast was used.

Keywords: Primer PCI, coronary dissection, retrograde approach.

Figure 1. 100% thrombosed lesion in middle right coronary artery (RCA).

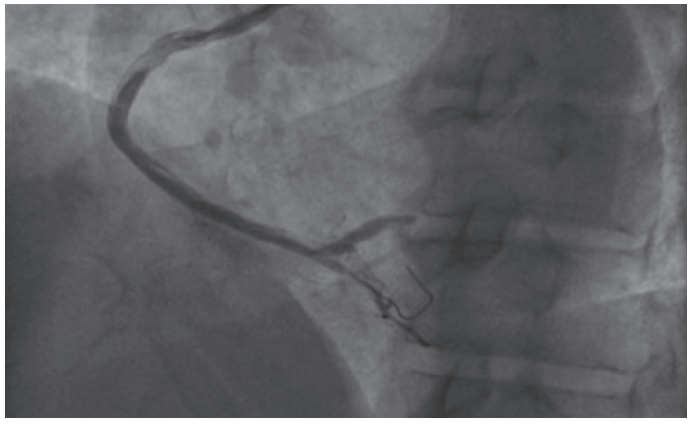

Figure 2. RCA was seen to dissected thoroughout from osteal.

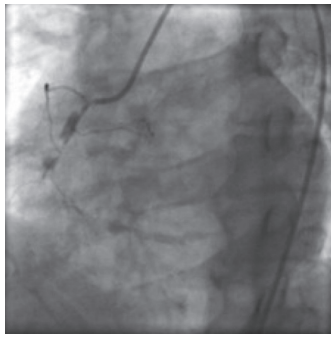

Figure 3. Coronary angiography revealed total occlusion in RCA with giant subintimal thrombosed formation lead to complet true lumen compression.

Figure 4. Antegrade crossing was challenging because the proximal RCA segment was very short and dissection flap was beginning from ostium.

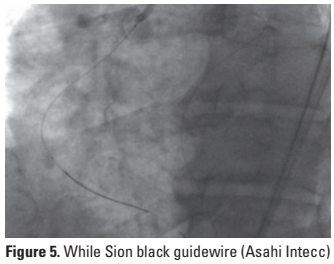

Figure 5. While Sion black guidewire (Asahi Intecc) was been pulling, the Choice floppy advanced into the distal RCA.

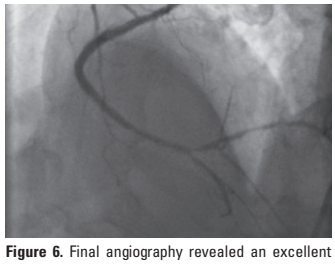

Figure 6. Final angiography revealed an excellent result with TIMI-3 RCA flow, and no residual stenosis.

SO-149

Should we use a staged or ad hoc approach in percutaneous coronary interventions through the radial artery to avoid radial artery spasm?

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Objective: A transradial approach has recently been adopted as the default strategy for percutaneous coronary interventions due to benefits which include reduced all-cause mortality, major access-site complications, and hospital stay, as well as increased patient comfort and early ambulation. However, radial artery spasm (RAS) is still a major drawback. The impact on RAS of an ad hoc compared with a staged intervention strategy has not previously been investigated. In this study, we sought to investigate the effect of ad hoc and staged percutaneous coronary intervention (PCI) on RAS in patients undergoing elective transradial coronary interventions.

Materials Methods: In this retrospective study, patients with symptoms suggestive of ischemia who were scheduled for coronary angiography and candidates for elective PCI were enrolled and divided into two equal groups: ad hoc group and staged group. RAS was clinically identified and established based on the existence of two or more of predefined clinical features.

Results: A total of 60 patients was enrolled in the study: 30 in the ad hoc group and 30 in the staged group. The mean time between coronary angiography and intervention in the staged group was 2.5 [1–30] days. RAS rates were similar between the ad hoc and staged PCI groups (16.7% [n=5] vs. 31% [n=9], p=0.233), but post-procedural pain was more frequent in patients in the ad hoc group (64.5% [n=20] vs. 33.3% [n=10], p=0.021). Radial artery occlusion did not differ between the ad hoc and staged PCI groups (10.7% [n=3] vs. 11.1 [n=3], p=1).

Conclusion: Use of ad hoc or staged strategies in patients undergoing transradial PCIs is not associated with reduced incidence of RAS. Post-procedural pain is more common in patients undergoing ad hoc radial access PCI than in those undergoing a staged approach.

Keywords: Radial artery spasm, percutaneous coronary interventions, radial access, coronary artery disease.

SO-150

Jump of the valve during transcatheter aortic valve implantation

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Summary: Transcatheter aortic valve implantation (TAVI) is a good treatment alternative for high-risk patients for surgery with severe symptomatic calcific aortic stenosis (AS). Potential complications, such as valve embolization, can occur during this invasive procedure. We present a valve case that is embolized to ascending aorta in TAVI order.

Case: An 86-year-old female patient was decided to have a TAVI due to advanced aortic stenosis. The 29 mm self-expandable valve in accordance with the procedure was placed in the aortic annulus by femoral access. Although the valve was completely opened, it was observed that the valve stent did not detach from the delivery system in the proximal part. While making small maneuvers to solve the connection, it was observed that the valve poped out from the ascending aorta. Ascending aortic angiography the valve was confirmed to be in safe localization and the Valve in Valve procedure was approved. The valve in the ascending aorta was fixed with the help of endovascular snare from the brachial access. Self-expandable stent valve of the same size, again femorally, was implanted uncomplicatedly with the appropriate procedure.

Discussion: The TAVI procedure has recently brought along a number of complications, with increased applicability. This rate is 4-38%. These are mainly peripheral embolization, heart blocks, vascular complications. It is of great importance that the patient is evaluated radiologically before the inventional process that the technical procedures are carried out during the procedure. In the case of proximal valve embolization, it should be ensured that the valve localization is safe, especially that it does not occlude the aortic branches of the arch. In such a case, the Valve in Valve procedure is an alternative to surgery.

Conclusion: TAVI is a very reliable method in terms of operational success. With careful monitoring and teamwork before the procedure, complications that may occur in the early period can be reduced after TAVI.

Keywords: Valve in valve, popout, TAVI.

SO-151

Typical angina pectoris due to left subclavian artery stenosis in a patient with LIMA-LAD coronary arterial bypass graft

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[2]Yalova Public Hospital, Yalova, Turkey

Introduction: Left subclavian artery stenosis (SAS) as a cause of angina pectoris (AP) is often reported in patients with a history of coronary artery bypass grafting through left internal mammary artery (LIMA). Even though it is a frequent situation, it can be often omitted without a proper physical examination and diagnostic procedures.

Case: 70 years old man presented with class III angina in the outpatient clinic. He was an exsmoker, he has hypertension and 15 years before had coronary bypass surgery (LIMA-LAD, RIMA-RCA, AO-OM). The blood tests were normal, the blood pressure was 140/80 (measured unilateral from the right arm) and all the pulses were palpable except left radial pulse. The echocardiography was in normal borders and the ECG revealed 0,5 mm ST depression in leads V5-6. Elective coronary angiography was performed. The left main was normal, all the native vessels were occluded totally and the bypass grefts were open. As we were trying to visualize the LIMA, we noticed that the left subclavian artery had 80–90% stenosis just before the origin of LIMA (Figure 1). We then proceeded to left subclavian artery PTA and stenting (Figure 2). After the procedure the patient was free of angina and he is beeing followed in our clinic.

Discussion: SAS is relatively frequent and, in general, it is an atherosclerotic condition that is more common in diabetics, smokers and in those suffering from peripheral artery disease. The term "subclavian steal syndrome" was introduced by Fisher in 1962. Since then, a few cases have been reported in the literature, because of its low incidence in the general population. Symptoms of SAS in the arms are claudication, reported by the patient, digital cyanosis and, in severe cases, distal necrosis by embolism. However, the most striking but rare symptoms are those affecting the brain and heart. In our case, although no involvement of the mammary artery was observed in the SAS, the distal coronary flow in the left anterior descending artery supplied by the mammary artery was impaired due to diversion of blood flow to the left subclavian artery. Since most patients with SAS are asymptomatic, the measurement of blood pressure with cuff on one arm can misdirect us, not controlling a potential hypertension and fail to raise an important diagnostic suspicion.

Keywords: Invasive coronary angiography, percutaneous transluminal angioplasty and stenting, subclavian artery stenosis.

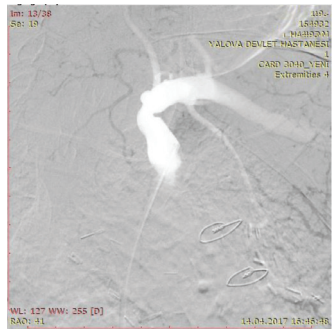

Figure 1. Angiography.

Figure 2. Stenting.

SO-152

A case report of simultaneously acute myocardial infarction and pneumonitis associated with vaping electronic cigarette

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Electronic cigarettes (e-cigarettes) have recently been widely used as a method to conventional smoking cessation or as an alternative, especially among young population. The newly identified E-cigarette, or vaping, product use associated lung injury (EVALI) and the risk of myocardial infarction may lead to catastrophic consequences including death. Herein, we present the case of a ST-elevation myocardial infarction (STEMI) accompanied by Pneumonitis in the setting of E-cigarette use in a 37-year-old male who presented with retrosternal chest pain at rest and shortness of breath that started 2 hours before admission.

Keywords: Electronic cigarettes, myocardial Infarction, pneumonitis.

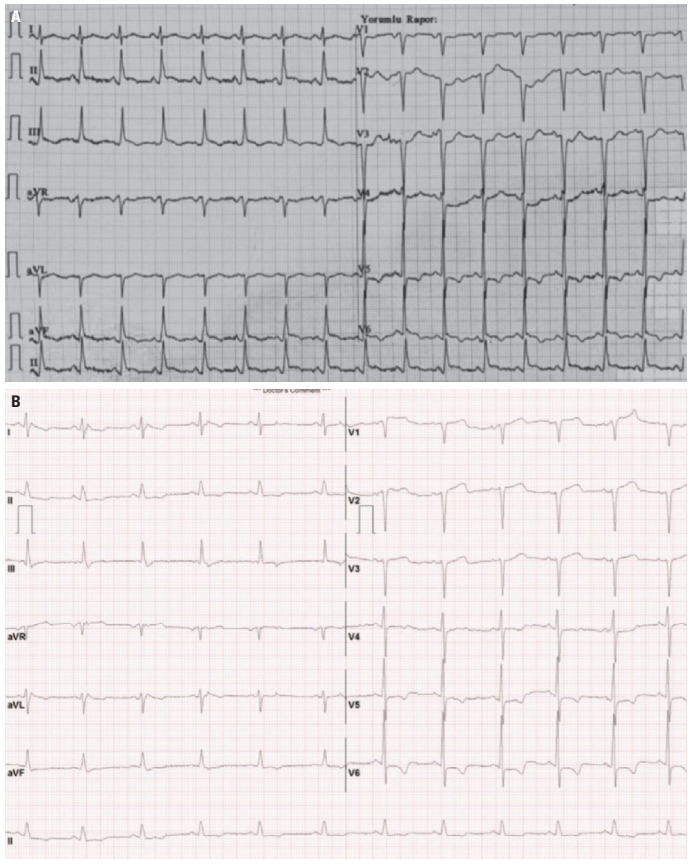

Figure 1. (A) 12-lead electrocardiogram revealing sinus rhythm with ST segment elevation on leads DII, DIII, aVF and V 6 accompanying with reciprocal ST segment depression on leads V1-5. **(B)** 12-lead electrocardiogram revealing ST-segment resolution after revascularization.

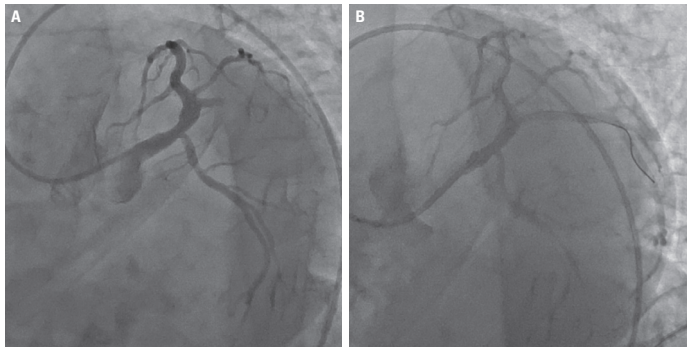

Figure 2. (A) Coronary angiography demonstrating total occlusion of the proximal portion of the high diagonal artery. **(B)** TIMI 3 flow after successfully performed percutaneous coronary intervention (PCI) and implantation of drug-eluting stent.

Figure 3. Chest radiography demonstrating cardiomegaly, blunting of the right costophrenic sinus and infiltration erasing the diaphragmatic contour in the right lower lung zone.

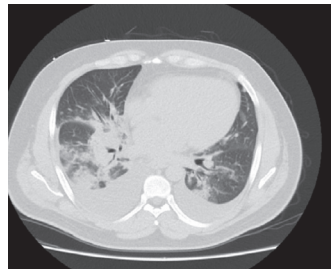

Figure 4. Thorax Computed Tomography (CT) revealing bilateral pleural effusion (more prominent on the right), Peribroncovascular thickening in the bilateral central lung and ground-glass infiltrates in the lower lobes of both lungs and posterior of the upper lobes bilaterally.

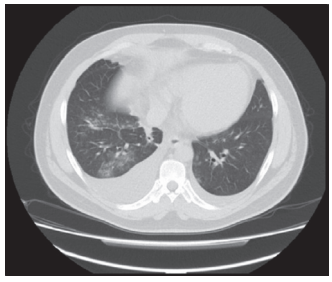

Figure 5. Control Thoracic CT showing bilateral pleurisy (slightly decreased on the left and similar appearance on the right), acinar densities and slightly decreased but persisted consolidations in the parenchyma.

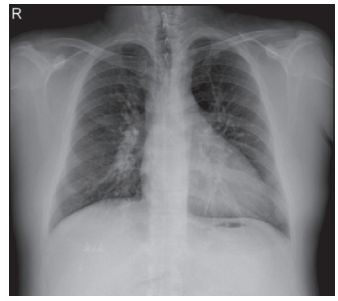

Figure 6. Chest X-ray taken 1 week later one week reveals no active infiltrative lesion in the lung parenchyma. Bilateral cardiophrenic and costophrenic sinuses are aslo clear.

SO-153

A rare case of congenital pulmonary stenosis with secundum atrial septal defect and tricuspid stenosis; surgical approach

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Background: Atrial septal defect and severe tricuspid stenosis associated with severe pulmonary stenosis are rare. Since treatment of only one of the existing lesions may result in insufficient hemodynamic improvement, the possibility of simultaneous intervention to multiple lesions by surgical procedure should be prioritized, but definitive diagnosis of combined valvular stenosis and septal defects should be made before surgical repair. We present a 24-year-old patient who was treated surgically with a diagnosis of secundum ASD and tricuspid stenosis accompanying congenital pulmonary stenosis.

Case: 24-year-old female patient.The patient had no known chronic disease and had complaints of rapid fatigue and exertional dyspnea.ECG; sinus rhythm, T wave negativity is present in V1-3.Physical examination also no ral, no rhonchi, S1 + S2 + rhythmic, 3/6 systolic murmur on pulmonary focus was present. Echo revealed LV flattened and D-shaped, RVOT hypertrophic, PV max 7.1 m / sec, severe PS, pulmonary gradient 244/91 mmHg, severe tricuspid stenosis, 2 degree TR, dilatation of RA, and severe hypertrophic RV. The patient was evaluated in the congenital council. Thorax CT angiography decision was taken.In CT; The pulmonary valves are thick, hypertrophic of the RV free wall and interventricular septum, flattened IVS.Pulmonary conus and posterior stenotic dilatation of left main pulmonary artery were detected. There were signs of thickening and stenosis in the tricuspid valve.Pulmonary valve surgery was recommended and the patient was operated.Secundum ASD detected in the operation was closed.Pulmonary artery was excised vertically up to RVOT.The muscle bands in the RVOT were excised. Number 25 aortic bioprosthesis was continuously sutured to the pulmonary region with prolene. The upper part was expanded with a dacron patch and the pulmonary artery and RVOT were expanded. After the tricuspid valve was evaluated with intraop TEE, commissirotomy was performed. In the biopsy of the pulmonary valve sent during the surgical procedure show that heart valve tissue which have showing myxoid changes, valve calcification and pulmonary hyaline degeneration were detected.The patient was taken to the post-operative intensive care unit and discharged on the 6th day after the procedure. In the 2nd year control echo, RV wall thicknesses were found to reach normal levels, Pv max 1.52 m / sec and pulmonary max gradient was 9.25 mmHg.The patient was completely asymptomatic at 2 years postoperatively and was able to perform daily activities easily.

Discussion: With advances in cardiac surgery, cases with combined cardiac anomalies can be successfully corrected.The diagnosis of combined pulmonary stenosis, tricuspid stenosis and ASD is evidenced by the consistency between clinical features and the results of specific tests such as TTE, catheterization and CT. In this case, surgery is great importance in order to eliminate multiple obstacles in the same operation.

Keywords: Congenital pulmonary stenosis, secundum atrial septal defect, tricuspid stenosis.

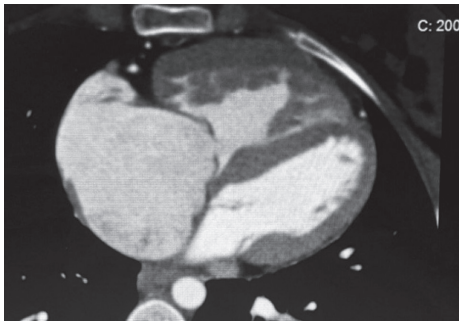

Figure 1. Cardiac four-chamber image on CT. Computed tomography showed hypertrophy in the right ventricular free wall and interventricular septum, and severe dilatation in the right atrium.

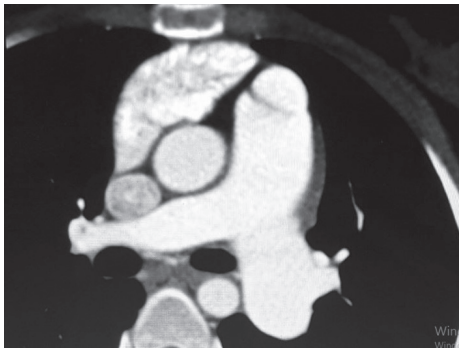

Figure 2. Pulmonary artery appearance on CT. Computed tomography showed the appearance of pulmonary conus and post stenotic dilatation in the left main pulmonary artery.

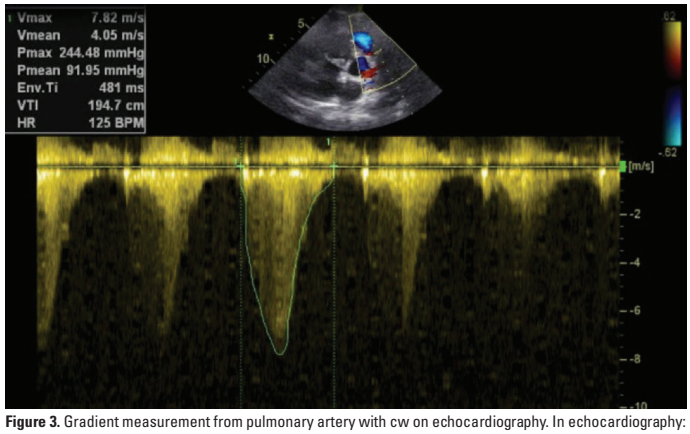

Figure 3. Gradient measurement from pulmonary artery with cw on echocardiography. In echocardiography: PV max 7.1 m / sec, severe pulmonary stenosis, pulmonary gradient was determined as 244/91 mmHg.

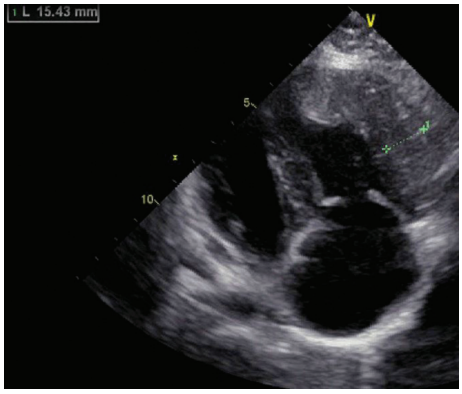

Figure 4. Right ventricular view on echocardiography. In echocardiography, the right atrium was dilated and RV was extremely hypertrophic. RV free wall thickness was measured as 15.4 mm.

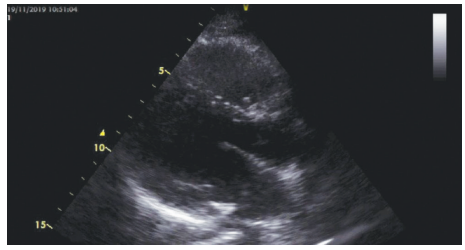

Figure 5. 2nd year control echocardiography. In 2nd year control echocardiography, RV wall thickness was normal.

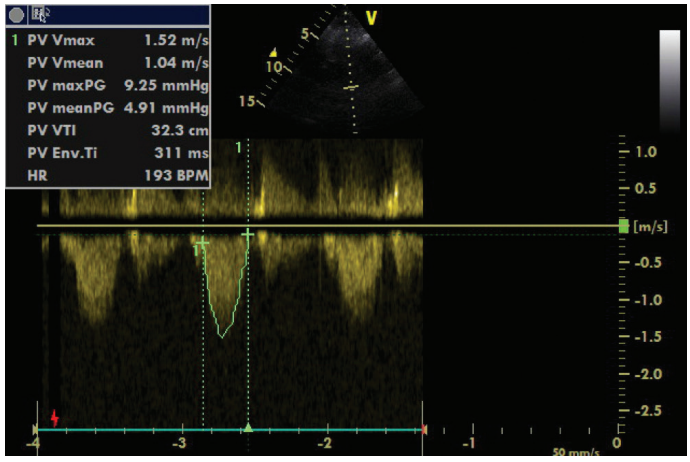

Figure 6. 2nd year control of pulmonary gradient. In the 2nd year control echocardiography; Pv max was measured 1.52 m / s and pulmonary max gradient 9.25 mmHg.

SO-154

Modified nano crush application to lesion without proximal optimization distance

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Lesions involving the ostium of a lateral branch of which we do not want to lose bifurcation lesions in the coronary arteries. There are many approaches such as crush, mini crush, double kissing mini crush and culotte in the revascularization of these lesions. Our case involves nano-crusher and minimal kissing outside of these approaches. 60-year-old male refers to non-hospital patients with chest pain, it has been identified in lateral leads elevation in electrocardiography and coronary angiography is done withdrawn. the high obtus marginal(OM) branch is fully occluded (Figure 1). On top of that, a current is provided by making a balloon to OM (Figure 2) In the follow-up, the patient is referred to us for advanced revascularization. The patient's hemodynamia was stable and troponin and CKMB were high. In tronstoracic echocardiography, EF was 50% and the lateral wall was hypokinetic. The coronary artery lesion was very close to the left main coronary and the circumflex osteal patient. We decided to have nano mini crush and minimal kissing on this patient. OM and CX were passed with 0.014 wire, following we sent 2.75 * 15 noncompliant balloon in advanced OM and sent 2.75 * 23 drug-released stent in cx osteale (Figure 3). In OM, the balloon was inflated at 8 ATM, the CX stent was aligned and the stent was placed. Then the stent's balloon was withdrawn until it aligned with the balloon in OM and the first kissing was done. 3 * 18 mm drug release stent was implanted into OM. The CX was passed through the wire again, and the strat was opened with a 1.5 * 12 mm balloon. Second kissing was done to OM with 3 * 12mm and CX with 2.75 * 15mm NC balloon with minimal contact (Figure 4). proximal optimization (POT) was done because there is no distance (Figure 5). In bifurcation lesions, POT is recommended by most operators however, as in our case, if there is no diameter POT, there are opinions that kissing the two balloons can be performed by kissing with the least possible contact during kissing. In this case, the diameter difference between the left main coronary and the lesion vessels is large and there was no lesion in the left main coronary, making us the least stratum stack and we have modified Nano crush, a method that we can conclude without POT. Although nano crush was proposed the final POT, we applied it by modifying it.

Keywords: Nano crush, bifurcation, minimal kissing.

SO-155

Percutaneous closure of the residual atrial septal defect in the patient with primary closure: Removal of the embolized closure device

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Introduction: It is among the most common congenital heart anomalies in adults. If left untreated, it can cause right heart failure, arrhythmia and pulmonary hypertension. Transcatheter closure has been accepted as a successful alternative to surgery in the treatment of secundum type atrial septal defects (ASD). However, many complications have been identified with the increasing use of this new technique.

Case: A 38-year-old male patient, who was previously operated for ASD, was diagnosed with atrial septal defect (ASD) in the transthoracic echocardiography examination performed in the outpatient clinic where he presented with complaints of dyspnea. The patient was taken to the catheterization laboratory to close the defect with a percutaneous approach. The defect was closed using a 20 mm ASD closure device (Figure 1). The patient, who was asymptomatic after the procedure and followed up in the clinic, showed that the closing device was in place on the transthoracic echocardiography performed the following day. The patient, who was asymptomatic after 1 month, was transported to the angiography laboratory after the transthoracic echocardiography performed in the control was found to be absent from the ASD closure device. Fluoroscopy revealed that the device was embolized and advanced through the right ventricular outflow tract to an estimated pulmonary artery level. To better determine the location, pulmonary computed tomographic (CT) angiography was performed and the device was confirmed to be in the right pulmonary artery (Figure 2). Pulmonary arteriotomy was performed at a distance and the device was caught with clamp and removed (Figure 3). Near the inferior vena cava in the atrial septum, approximately 2x3 cm. It was observed that there was ostium secundum type defect. It was observed that the inferoposterior rim of the defect was relatively short and flexible. ASD was closed using a pericardial patch.
Discussion: After the ASD closure device is placed, device embolization is known to occur in 0.5% of cases, even if the operator is experienced. The use of small ASD closure devices has been reported as the most common cause of embolization, followed by inadequate and weak rims. The reason for the device embolization in our case is that the septum, which was previously closed due to ASD, probably had weak rims. Due to the fact that the embolized device was distal to the right pulmonary artery distally, it would be difficult and complicated to remove it with a percutaneous approach, it would require advanced clinical experience and medical equipment, and there was no attempt to percutaneous removal in the literature, since the surgical method was used in the majority of similar cases. Although percutaneous ASD closure is a safe and effective method, there are complications requiring surgery, as in our case. The surgical method is a safe method for both removal of the device and simultaneous closure of the defect.
Keywords: Device embolization, septal occluder device, atrial septal defect.

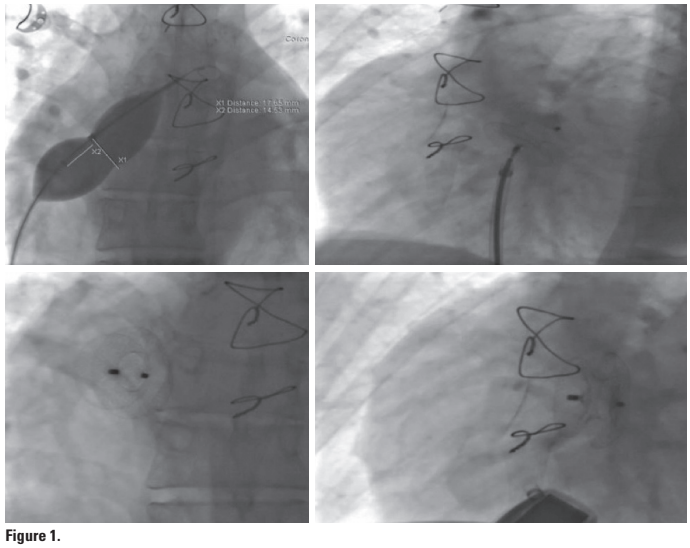

Figure 1.

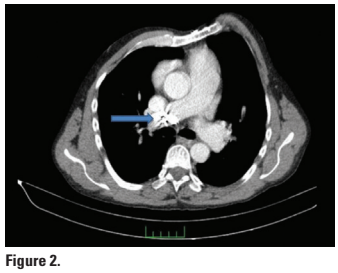

Figure 2.

Figure 3.

SO-157

Endovascular treatment of chronic total occluded brachial artery

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Cause of brachial artery stenosis are atherosclerotic disease, giant cell arteritis, fibromuscular dysplasia, and trauma. Chronic brachial artery atherosclerotic occlusive disease causes approximately 12% of symptomatic upper extremity ischemia. Claudication is the most common symptom, but most patients are asymptomatic because of abundant collateral formation. If patients have symptoms like arm claudication and arm weakness, chronic brachial artery occlusion must be treated. Because chronic brachial artery occlusion is rare, the optimal management strategy is unknown. The number of cases treated with percutaneous techniques is increasing with technological advancements over the last two decades.
A 41-year-old man was admitted to our hospital with claudication of his right arm. A 8 Fr sheath was inserted into the femoral artery, and a 7 Fr right Judkins guiding catheter was used to cannulate the subclavian arteries. The digital substraction angiogram showed that the brachial artery was totally occluded. Then 5 F Bern catheter was advanced to the proximal portion of the right brachial artery. Occlusion was not crossed in an antegrade fashion using a Fielder XT guidewire. After failure of the antegrade approach we decided retrograde approach. Puncture was performed under fluoroscopic guidance during live contrast for retrograde approach. Occlusion was successfully passed with a Fielder XT guidewire and Fielder XT guidewire was placed inside the antegrade catheter under fluoroscopic guidance. Then the retrograde wire is externalized. The 4.0x60 balloon was advanced into occluded segment over wire and lesion was dilated at 10 atmospheres. 5.0x80 mm self expandable stents were implanted. Final angiography demonstrated normal flow and no residual stenosis.The patient was discharged one day after stent implantation on 100mg of aspirin daily and 75 mg of clopidogrel daily.
The endovascular treatment for chronic total occluded brachial artery may be both easier and quicker than surgery. However, because of a lack of long-term follow-up results such as stent stent thrombosis or in-stent restenosis, we do not have enough data to evaluate its inferiority or superiority over the surgery.
Keywords: Brachial artery, chronic total occlusion, endovascular treatment.

SO-158

An alternative extra-support proposal and an example for bifurcation interventon in mesenteric artery interventions

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Background: Although mesenteric artery lesions are common on the background of atherosclerosis, they are generally asymptomatic. In the mesentery circulation; celiac artery, superior mesenteric artery and inferior mesenteric artery are responsible. Usually, in order for symptoms to occur, there must be lesions in two or more vessels. The most common symptoms are post-prandial abdominal pain and weight loss. The first option in treatment is percutaneous intervention and medical treatment of atherosclerosis.
Case: 70 year-old-patient, who did not have any risk factors other than smoking and did not have additional diseases, applied to internal diseases department and gastroenterology clinic due to the post-prandial abdominal pain and weight loss. With the suspicion of a lesion in the proximal of superior mesenteric artery (SMA) in CT angiography, the patient was directed to the cardiology clinic for angiography. Percutaneous intervention is decided for SMA lesion. Because of catheter engagement was not good during percutaneous intervention, the procedure was performed with the help of guideliner. The process was terminated by kissing balloon and proximal optimization with the formation of a critical lesion in ostium of the pancreaticoduodenal artery that originates from the lesion area. The patient was asymptomatic at the 18th month of follow-up as of the day of the procedure.
Conclusion: When we have difficulty due to the processing technique in mesenteric artery interventions, the materials and techniques we use in complex coronary interventions can provide us with process support.
Keywords: Mesentery artery interventions, guideliner, bifurcation.

SO-159

Coronary artery microfistulas with apical hypertrophic cardiomyopathy

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A 66 year-old male patient admitted to our hospital with a history of ankle swelling and peri-orbital edema for two months. ECG showed atrial fibrillation with voltage criteria of left ventricule hypertorphy. In the Echocardiography apical hypertrophy was observed that had a correlation between diagnostic criteria for Apical hypertrophic cardiomyopathy (ApHCM). Catheterization findings were Coronary Artery Microfistulas forming the LV cavity in three to four beats. In this case report we describe a rare co-incidance of coronary artery microfistulas with apical hypertrophic cardiomyopathy whom has had the most frequent morbid event, atrial fibrillation. Also the first impression is beyond the typical symptomsof both ApHCM and coronary microfistulas. The role of ECG in the first step has been magnified as a key role in the diagnosis.
Keywords: Apical hypertrophic cardiomyopathy, coronary artery microfistulas, atrial fibrillation.

SO-160

Assessment of silent cerebral infarcts in chronic total occlusion patients with percutaneous coronary intervention

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Aims: Neuron specific enolase is a cytoplasmic enzyme and sensitive neuronal ischemia marker found in nerve cells. Elevation of Neuron Specific Enolase (NSE) in the absence of any clinically apparent stroke or transient ischemic attack, so-called silent cerebral infarcts (SCIs). SCI may be associated with neurologic deficits. In this study, we aimed to evaluate the incidence of Silent Cerebral infarcts, defined as elevated Neuron Specific Enzyme after coronary chronic total occlusion (CTO) intervention and elective coronary stenting, and procedural factors affecting silent cerebral infarcts.
Methods and Results: Study population consisted of 2 groups of patients. Group 1 included consecutive patients with elective coronary chronic total occlusion stenting; group 2 consisted of patients who underwent elective coronary stenting. NSE blood levels were measured before and 12-18 hours after the procedure. Elevation of >20 ng/ml was considered as SCI. Exclusion criteria were baseline NSE elevation, acute coronary syndromes or cardiac surgery within 4 weeks, planned use of glycoprotein IIb/IIIa receptor inhibitors, patients with recent cerebrovascular accident, intracranial hemorrhage, and head trauma, central nervous

system tumor, degenerative central nervous system disorders, neuroendocrine tumors. After pre evalution, 120 patients met the study criteria. and 12 of them were excluded for following reasons: 1 patient had miyocardial infarction from another coronary artery within 24 hour, 1 patient had acute stent trombosis, 1 patients had ventricular fibrillation, 1 patients had stroke during intervention, 1 patient had transient ischemic attack after PCI, 2 patients underwent unplanned left main coronary artery (LMCA) stenting, 1 patient had hypotension requiring inotropic agent, 4 patient had elevated baseline NSE. Finally, 108 patients were included in the study. fifty-five of 108 study patients (50,9%) had SCI after the procedure. The rate of silent brain infarction was 59.7% in the CTO group and 39.1% in the elective coronary stenting group. Patients with SCI were more likely to have Diabetes Mellitus, hyperlipidemia, higher HbA1c, total stent length, procedural time. Multivariate logistic regression analysis demonstrated CTO procedure (odds ratio [OR] 3.129; 95% confidence interval [CI] 1.246 to 7.858; p<0.015), and presence Diabetes Mellitus (odds ratio [OR] 2.93; 95% confidence interval [CI] 1.185 to 7.291; p<0.020) as independent predictors of SCI.

Conclusions: Increased catheter manipulations, procedure time, and number of equipment used may lead to an increase in the frequency of silent brain damage in complex procedures such as CTO. It can occur even in patient with elective coronary interventions. This may lead the decreased cerebral functions in long term. CTO and similar complicated procedures, especially in diabetic patients should be careful about SCI.

Keywords: Chronic total occlusion, silent cerebral infarct, neuron specific enolase.

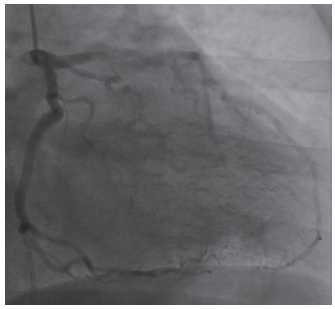

Figure 3. Fistula flow filling the left ventricular cavity in the right anterior oblique pos.

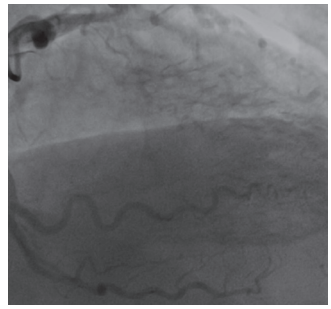

Figure 4. Fistula flow filling the left ventricular cavity in the right caudal pose.

SO-161

Coronary camaral fistula causing ischemia in a patient with atypical angina

Fuat Polat, Ali Uğur Soysal, Eser Durmaz, Bilgehan Karadağ, Zeki Öngen

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Abstract: Coronary cameral fistulas (CCF) are abnormal connections between the coronary arteries and the heart cavities, which can change the hemodynamic parameters of the coronary arteries. CCF usually open into the right heart cavities, and their relationship with the left heart cavities is much rarer. Although most of the patients are asymptomatic, symptoms and complications become more frequent with age. The clinic differs according to the size, origin and area of the fistula.

Case Description: A 65-year-old male patient with the diagnosis of hypertension and diabetes applied to our clinic with complaints of dizziness, weakness and atypical chest pain. No evidence of ischemia was observed on the electrocardiography (ECG). On transthoracic echocardiography, left ventricle was hypertrophic and systolic function was normal (EF 55%). The left atrium was wide, other heart spaces were normal width. No regurgitation was observed in the aortic and mitral valve. In myocardial perfusion scintigraphy (MPS), ischemia was detected in a limited area in the lateral wall apical sections. Although coronary arteries were normal in the coronary angiography, it was observed that the left ventricle was filled with sinusoidal collaterals, especially from the left anterior descending coronary artery. These fistulas originating from the left anterior descending coronary artery were evaluated as hemodynamically significant fistulas because they cause ischemia in MPS and cause symptoms.

Discussion: CCF are rare and generally asymptomatic coronary artery anomalies. Most cases are symptom-free or have atypical symptoms, whereas fistulas that produce high levels of flow may have typical effort-related angina pectoris. Although there is no consensus on the treatment approach in symptomatic patients, percutaneous or surgical intervention may be performed considering the anatomical and hemodynamic features of the fistula.

Keywords: Coronary cameral fistula, angina pektoris, ischemia.

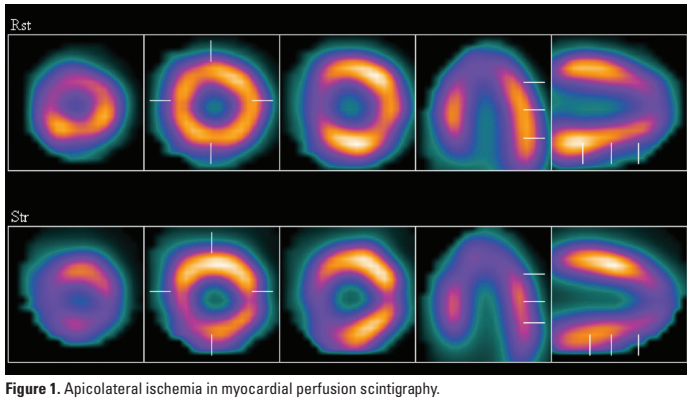

Figure 1. Apicolateral ischemia in myocardial perfusion scintigraphy.

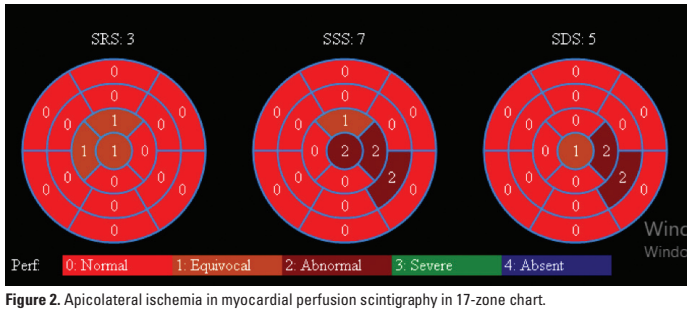

Figure 2. Apicolateral ischemia in myocardial perfusion scintigraphy in 17-zone chart.

SO-162

A patient with factor V leiden mutation with reccurent intraoperative thrombosis

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A 25-year-old male patient without known cardiovascular risk factors presented with chest pain for 18 hours. The ECG showed poor R progression in V1 through V4. The first troponin was normal (1 pg/mL) but second was measured 864 pg/ml. Transthorasic echocardiography revealed that the apex of left ventricle was severe hypokinetic. The coronary angiography showed totally occluded left anterior descending artery (LAD) from the ostia and normal right coronary and circumflex artery (CFX) (Figure 1). Ticagrelor and asetlysalisilic asit and heparine (IV, 10.000 IU) were given. After predilatation, the drug eluting stent was implanted in LAD ostia (Figure 2). Postdilatation was perfomed. Short after the postdilatation, thrombus in the stent was noticed (Figure 3). Bare metal stent was implanted inside the first stent. Just after completing LAD stent procedure (Figure 4), thrombosis devoloped in CX ostium (Figure 5). Balloon predilatation and a bare metal stent were performed from LMCA to CX ostium (Figure 6). Balloon dilatation was performed CFX stent struts towards to LAD. Procedure completed with minimal thrombus in LAD stent with TIMI 2-3 flow (Figure 7) and no thrombus with TIMI 3 flow in CFX ostium. In addition to ticagrelor, tirofiban perfusion continued for 18 hours. Angiography 24 hours after the first procedure showed TIMI 3 flow with completly dissolved thrombus in LAD and CFX. The patient was referred to hematology and discharged 7 days after the admision. One month after the first procedure, coronary angiography showed TIMI 3 flow in LAD and CFX (Figure 8). He was diagnosed that he had factor V Leiden mutation. Ticagrelor was stopped and warfarin in addition to antithrombotic therapy including asetlysalisilic asit and clopidogrel was started. This patient shows that Factor V Leiden Muation should be suspected especially in young patients.

Keywords: Acute coronary syndrome, thrombosis, factor V leiden mutation.

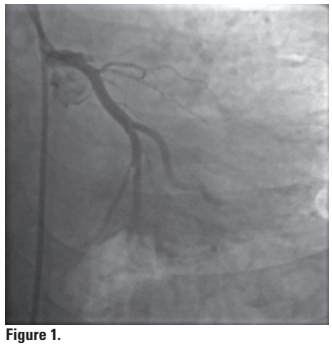
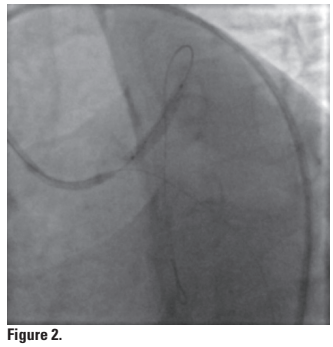


Figure 1.



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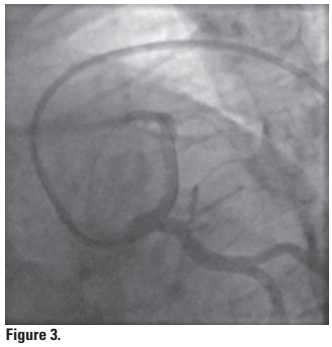
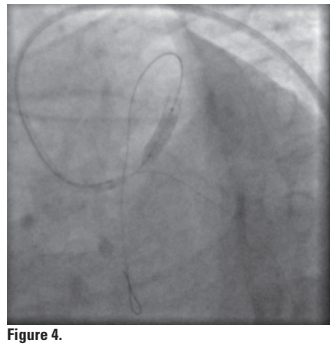


Figure 3.



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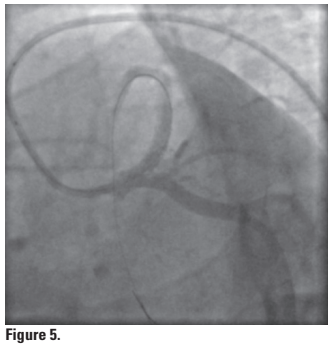
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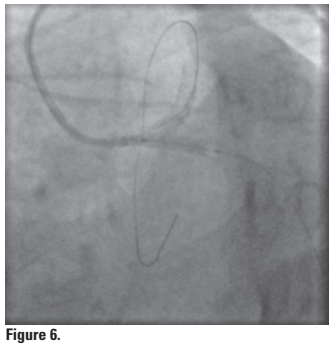
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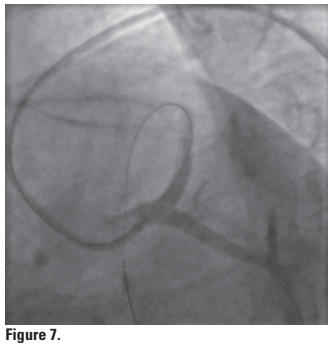
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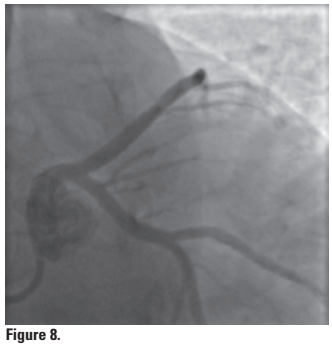
Figure 8.

SO-163

Using trombus aspiration catheter in unusual way in treatment of noreflow

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A 65-year-old male with hypertension presented after successful cardiopulmonary resustation. Cardiac arrest developed after he had had chest pain and he was brought to the hospital after successful cardiopulmonary resusitation. ECG showed in ST segment elevation in lead of DII, DIII and aVF derivation and one milimeter ST depresion in lead V5-6. The patient was transferred to catheter laboratory. The coronary angiography revealed as follows: Totally occluded right coronary artery (RCA) along with moderate lesions in circumflex artery (Figure 1). After predilatation, visible thrombus was seen (Figure 2). Thrombus aspiration was performed and a bare metal stent was implanted. The flow became TIMI 0 and blood pressure declined to 60/40 mmhg. Intracoronary tirofiban and adenosine and diltiazem was given. However the flow did not improved. Thrombus aspiration catheter placed in the distal RCA and diltiazem and adenosine were given to distal RCA. The flow became TIMI III and blood pressure quickly rised. Another stent placed proximal to the first stent and postdilatation performed into the region of stent overlap.Coronary angiography showed TIMI III flow without any visible thrombus (Figure 3).The patient transfered to intensive care unit. This case shows that thrombus aspiration catheter can be used as a microcatheter as well.

Keywords: Lack of microcatheter, adenosine and diltiazem coctail, no-reflow.


Figure 1.

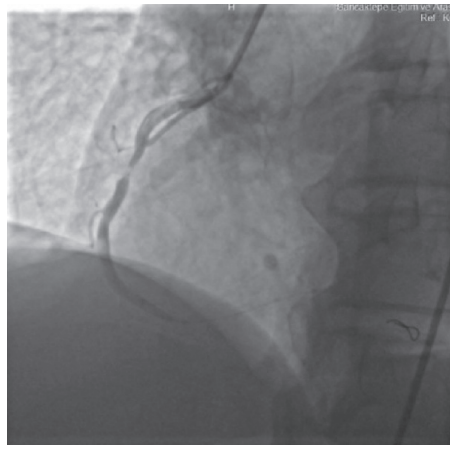
Figure 2.

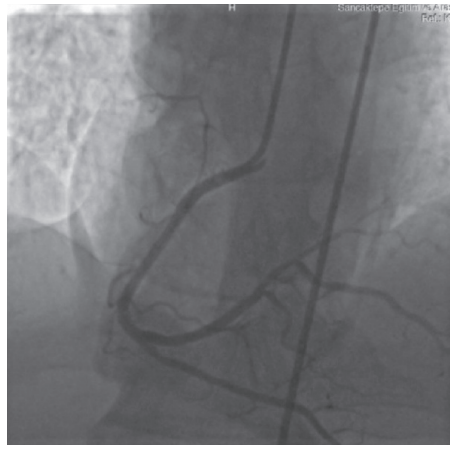
Figure 3.

SO-164

Perforation of a recent LIMA-LAD anastomosis: Successful treatment with prolonged balloon inflations

Uygar Çağdaş Yüksel, Erkan Yıldırım, Muhammed Geneş, Mustafa Köklü, Serdar Fırtına, Özkan Eravcı, Hatice Taşkan, Ender Murat, Meltem Altınsoy, Yalçın Gökoğlan, Ayşe Saatçi Yaşar, Murat Çelik

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Introduction: The incidence rate of coronary artery perforations during percutaneous coronary interventions (PCI) is,1%0.2–0.6%. The most common causes are wire perforation, atherectomi and aggressive extenting of ballon or stent. We describe a 58-year-old man who developed coronary perforation due to balloon angioplasty in a newly placed left internal mammary artery (LIMA) graft to the left anterior descending artery (LAD).

Case: A 58-year-old male patient developed ventricular fibrillation during the postoperative follow up in cardiovascular surgery intensive care unit just 10 hours after robotic-assisted CABG surgery. After defibrillation and maintaining sinus rhythm, the patient had hemodynamic instability and infusion of inotropic agents started and IABP was implanted. ECG showed ST segment elevation in precordial leads which was consistent with anterior MI. After discussion with our heart team urgent PCI was planned. Coronary arteriography demonstrated total occlusion of LAD immediately after the LIMA-LAD anastomosis. After administration of 10,000 units of intravenous heparin, a 7 French JR guiding catheter was placed in the ostium of the LMCA. A 0.014 inch Balanced Middle Weight guide wire (Advanced Cardiovascular Systems) was advanced and positioned in the distal native LAD. A catheter was also placed in the ostium of LIMA for dual injection for better visualization of the anastomosis. Predilatation of the involved segment was performed with balloon catheter of appropriate size. Although revascularization of the LAD was achieved we observed a significant extravasation of contrast at the anastomosis site. Immediately after the perforation we performed prolonged balloon inflations with appropriate size. The patient did not become hemodynamically unstable nor developed clinical signs of pericardial tamponade leading or shock necessitating emergent pericardiocentesis. After a few attemps with prolonged balloon inflations of extended period of time we achieved to stop extravasation. The patient was followed up 5 days in ICU without any event and discharged with medical theraphy.

Discussion: The major causes of coronary perforation include guide wire trauma, balloon rupture, or balloon oversizing This complication may lead to sanguineous pericardial effusion, which is usually controlled with prolonged balloon inflations at the perforation site, reversal of anticoagulation, and occasionally deployment of a covered stent or microcoil embolization. Perforation of a LIMA graft appears to be a very rare complication but may potentially have devastating consequences. Several factors may have accounted for the perforation in our patient. In our opinion the foremost reason was that the "fresh" greft was just anastomosed 10 hours before the the intervention which is not an enough period of time for healing. This may increase the fragility of mediastinal tissues including the internal mammary artery leading to the perforations with PCI.
Keywords: Perforation, LIMA-LAD anastomosis, prolonged balloon inflations.

SO-165

Interventional approach to a transcatheter aortic valve implanted acute coronary syndrome patient

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Introduction: It is important to consider future coronary artery access in patients with transcatheter aortic valve implantation (TAVI). Coronary angiography and percutaneous coronary intervention can be challenging in patients after TAVI. Knowing the valve design, its relationship with coronary ostiums, sinus valsalva and sinotubular junction might be helpful to overcome the difficulty of coronary re-access and establish a strategy to manage such patients.
Case: A 75-year-old female patient was referred to our hospital with a diagnosis of NonSTEMI. TAVI procedure was performed 5 years ago because of symptomatic severe aortic stenosis. Afterward, the patient was taken to the catheter laboratory. The procedure was started with the left trans-radial route. An attempt was made to cannulate the LMCA ostium with the left 3.5 Judkins catheter, but it was difficult to engage the coronary ostium due to the valve struts. Then, LMCA ostium was cannulated by catheter manipulations. After imaging the left coronary artery system, we observed that the catheter tip was partially trapped during the withdrawal of the catheter. The catheter was liberated from trapping by applying a gentle pull force. Then, we tried to cannulate the right coronary artery with the right 4.0 Judkins catheter, but the RCA ostium was not cannulated with classical maneuvers due to the horizontally distorted aorta. RCA cannulation was also difficult because of the valve which restricted the maneuvers. There was an osteal lesion in the RCA. The right guiding catheter was used for stenting, then the AR-1 guiding catheter was used to increase the support, and the procedure was successfully completed with the stenting of the RCA ostium. After the procedure, the control echocardiogram showed a functional bioprosthetic aortic valve.
Discussion: Theoretically, some valves provide relatively easy access to the coronary artery, while others may make access more difficult due to the density of the network or the presence of a new commissure at the Ostia level. For this reason, to provide easy access to the coronary arteries after TAVI, appropriate valve implantation should be performed for effective percutaneous treatment of coronary artery disease. Selective engagement should be made of diamond cells in front of the ostium, and the catheter should be in a coaxial position. Care must be taken, as the catheter may be bent during the procedure or be trapped when removing the catheter. Therefore, before the catheter is withdrawn from the valve struts, it should be removed on a wire from the ostium. Excessive force should be avoided. The catheter may bend and break around the valve. If necessary, a balloon can be used. It can be helpful to straighten the catheter shaft with a 0.038 mm wire. Although we pull the catheter without a wire due to the partial entrapment, it is safer to pull it by wire.
Keywords: Catheter entrapment, Coronary angiography, Percutaneous coronary intervention, Transcatater aortic valve implantation.

SO-166

Unprotected left main coronary intervention due to left main stenosis and LAD osteal occlusion in patient with acute anterior myocardial infarction

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[2]Department of Cardiology, 25 Aralık Goverment Hospital, Gaziantep, Turkey

Background: Left man stenosis and ostial occlusion of the left anterior descending (LAD) is a difficult condition.Crossover stent implantation from the distal left main coronary artery (LMCA) across the LAD may be reasonable for LAD osteal occlusion. We presented a case treated with stenting from LMCA across LAD due to acute anterior myocardial infarction (MI).
Case: 47 years old male patient, without any cardiovascular disease history, admitted to emergency service due to ongoing chest pain. ECG relived acute anterolateral MI, echocardiography showed global left ventricular hypokinesia and ejection fraction was 30%. Patient was taken to urgent coronary angiography and there were 50% stenotic lesion on LMCAand total thrombotic lesion on LAD proximal part seen. After wiring both of LAD and Cx, 2,5 x12 mm balloon angioplasty was done to LAD proximal and TIMI 2–3 flow was established. After balloon angioplasty; firstly 3.0x38 mm DES (Promus, 14 atm) was implanted from LMCA to LAD ostium. After LAD stent implantation, first POT was done with 4.5x12 mm NC balloon. After POT, Cx rewired and kissing balloon inflation was performed by 3.0x12 and 3.0x12 mm NC balloons. Final POT was done with 4.5x12 mm non compliant balloon on LMCA. Final angiogram showed excellent stent expansion and there isn't any residual lesion. After coronary intervention, patient was discharged without any complication.
Conclusion: Left main stenting isn't simple intervention and may cause fatal complications. Left main stenting has been showed non-inferior to coronary bypass grefting in some clinical trials. However; in this trials intravascular imaging tools and bigger size stents were used. Besides that; left main coronary stenting with proper kissing balon inflation and POT should be recommended for the treatment of left main disease in setting with acute anterior MI.
Keywords: Left main stenting, acute coronary syndrom, bifurcation.

SO-168

Direct aspiration of totally occluded celiac artery with guiding catheter

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In this case, the catheter-mediated aspiration of a totally occluded celiac artery was defined in a patient who applied to the emergency department with abdominal pain. A 43 year-old female patient was admitted to the emergency department with abdominal pain. The contrast enhanced computed tomography was shown the celiac artery was totally occluded at osteal segment (Figure 1). The patient was hospitalized by our general surgeons and consulted to us for the possibility of percutaneous intervention. A 6F sheath was inserted to the right femoral artery. The celiac trunk was selected with a 6F 3.5 judkins right (JR) diagnostic catheter. The hepatic branch of the celiac trunk was totally occluded at proximal segment. The 6 F sheath was replaced with an 8 F sheath and a 0.014 floppy wire (Hi-torque Floppy II, Abbott) was placed in to the hepatic artery. An 8 F3.5 JR guiding catheter without side holes was slowly inserted to the hepatic artery over the floppy wire. The injector of the manual coronary aspirator catheter (Aspiron, Meril) was connected directly to the guiding catheter and the thrombus was aspirated directly via 8F catheter under negative pressure. A large amount of thrombus material was aspirated (Figure 2). The Hepatic artery flow was totally provided except duodenal artery. The dual antiplatelet therapy was planned and the procedure was terminated. The asymptomatic patient was discharged three days later. The above mentioned case is the first one in the literature that she had been successfully managed only with catheter-mediated direct thrombus aspiration. In mesenteric artery occlusions, percutaneous intervention has been reported to be as effective as surgery in selected cases. The procedure is often continued with a balloon angioplasty and stenting. On the other hand, the success rate of percutaneous interventions in acute mesenteric ischemia is lower in patients having thromboembolic occlusion than those with atherothrombotic occlusion as mentioned in peripheral artery disease guidelines also. In such cases, there are case reports or small series that report the use of thrombus aspiration in mesenteric artery occlusions. In such thrombotic lesions, the reduction of the thrombus load with above mentioned technique may affect the final results prior to perform a balloon dilatation or stenting.
Keywords: Aspiration, celiac artery, thrombus.

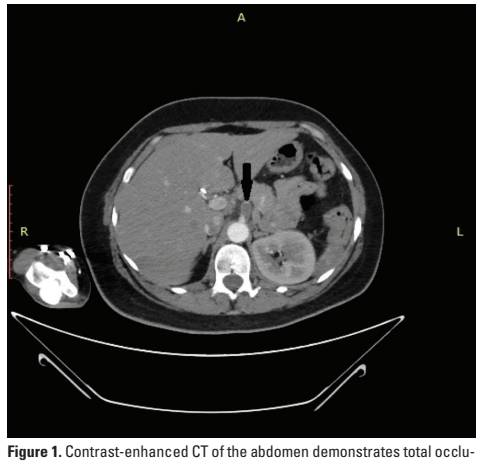

Figure 1. Contrast-enhanced CT of the abdomen demonstrates total occlusion of the Celiac artery (arrow).

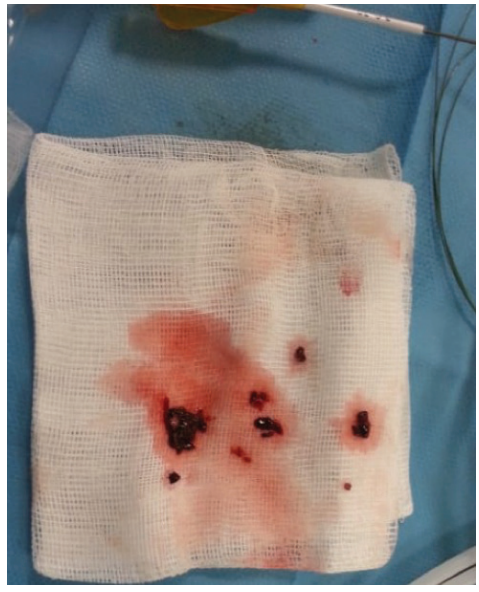

Figure 2. Aspirated thrombus materials.

SO-169

Staged approach to distal segment in CTO lesions

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[2]Department of Cardiology, Ordu University Training and Research Hospital, Ordu, Turkey

Introduction: The general approach during intervention to CTO lesions is in the direction of stenting all diseased areas. Elective imaging can be planned after stenting the total segment to assess the vasodilation capacity of the distal vascular bed in patients who require very long stents.

Case: The patient is 78 year-old and male. He was admitted to our clinic with the effort dyspnea and chest pain symptoms. The patient was told that he had heart failure 2 years ago and medical treatment was started. Coronary evaluation has not been done before. Exercise dyspnea and chest pain have improved in last 3 months. The patient was taking furosemide, ACEi, beta-blocker, ranolazine, acetylsalicylic acid. ECG: Sinus rhythm, heart rate 60/min, R progression loss on anterior leads. Echocardiography: EF%45, anterior and apikal hypocinesia and moderate mitral regurgitation. We suggested coronary angiography to the patient. Imaging with JL4 and JR4 diagnostic catheters was performed on the 6F sheath through the right femoral artery (Figure 1).

We decided to make PCI to LAD CTO lesion. 7F sheath was inserted and the lesion was passed with Fielder XT wire with Microfine microcatheter support over the EBU 4 guiding catheter. After the microcatheter did not pass the lesion, it was removed and the lesion was passed with a 1.25x20 mm Ryujin balloon. Then dilatation was performed with a 2.0x20 mm hydrophilic balloon. Due to the absence of appropriate balloon length in the laboratory, 2.5x30 mm balloon was placed to coronary, proximal 10mm portion of the balloon inflated in the guiding catheter and balloon dilatation was performed (Figure 2).

Sirkumflex artery was wired with a floppy wire. 3.0x20 mm Xience Pro DES was implanted to the LAD osteal stenosis, with Szabo technique. Stent was postdilated with a 3.5x20 mm NC balloon. We decided to elective imaging for stenosis in the LAD mid and distal segments (Figure 3). LAD lesion reassessed after 2 weeks. The stenosis in the distal segment was now seen to be non-critical. 2.75x23 mm Xience Pro DES was attached to the stenosis in the LAD mid segment (Figure 4). The patient has no anginal symptoms for 3 months.

Conclusion: During CTO procedure, elective imaging and staged approach can be planned to distal the segment that is total in the target vessel.

Keywords: Chronic total occlusion, staged revascularisation, szabo technique.

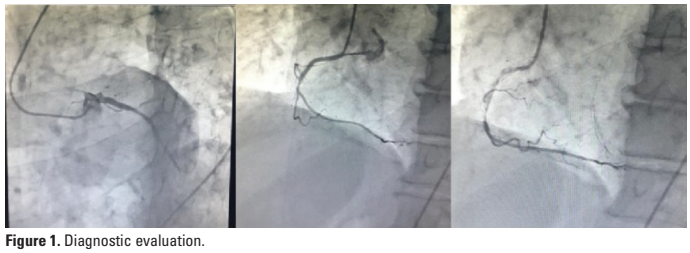

Figure 1. Diagnostic evaluation.

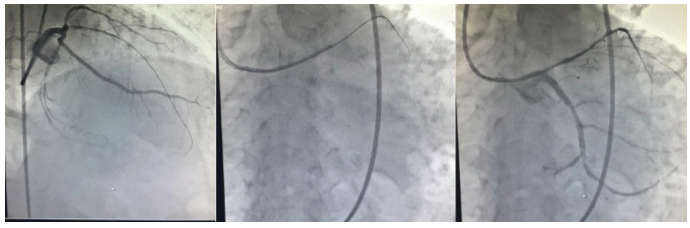

Figure 2. Balloon dilatation of LAD CTO lesion.

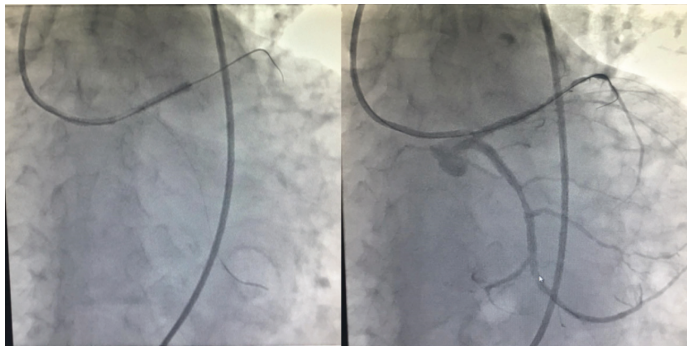

Figure 3. LAD stent implantation.

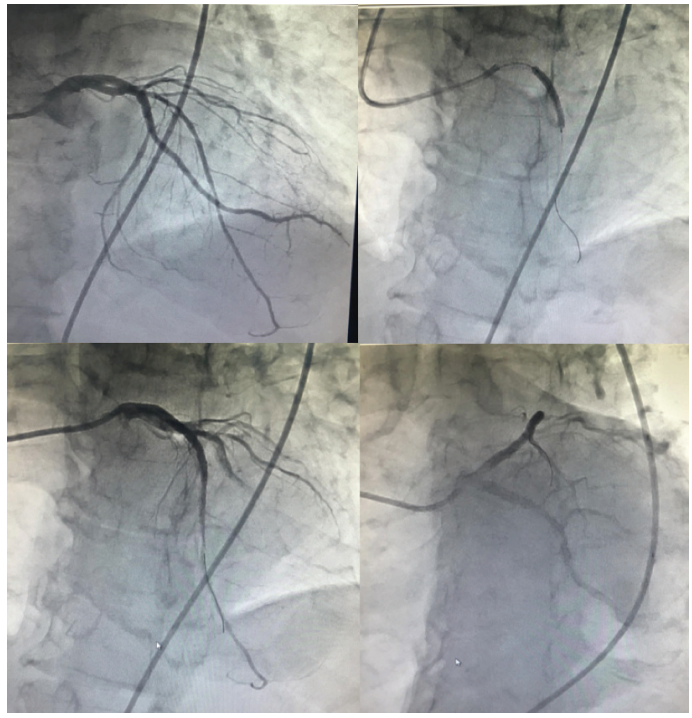

Figure 4. LAD elective PCI and final image.

SO-171

A rare and almost lethal complication: Dislodgement of a previously implanted stent

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Introduction: Stent dislodgement is an important complication of percutaneous coronary intervention (PCI). Although there are several case reports about stent dislodgement, cases about migration of the previously placed stent is limited.

Case Presentation: A 46-year-old male admitted to emergency clinic with anterior myocardial infarction. There was 90% stenosis in both left anterior descending artery (LAD) and diagonal branch (Figure 1A). At first 3.5x15 mm sized drug-eluting stent (DES) was implanted after balloon angioplasty (Figure 1B). After the PCI total occlusion was seen in diagonal branch (Figure 1C). The branch was tried to be passed with guidewire but could not be achieved. So it was decided to perform PCI after abciximab infusion. After 4 hours, balloon angioplasty was performed to diagonal branch. Then another lesion was seen on the distal area from the LAD stent and 2.75x16mm DES was implanted (Figure 2A). 2.25x16mm DES placed in diagonal branch and 2.75x16 mm balloon was placed in the stent from the previous session. Kissing balloon procedure was applied and 2.25x16mm stent was implanted to the diagonal branch (Figure 2B). Before the control pose, both balloons wanted to be removed but there was resistance and the balloons did not move. Carefully entire system was pulled from the catheter. After the removal of the system, the deformed stent material was seen on the guide wire. Immediately another pose was taken. The stent placed currently on proximal LAD and distal stent placed in the LAD 4 hours before were not seen. Only the stent in diagonal branch was in place (Figure 2C). No coronary dissection or rupture was seen (Figure 2D). Immediately 2.75x38 mm DES was implanted into LAD (Figure 2E). Then kissing balloon was performed to the bifurcation and TIMI 3 flow was obtained (Figure 2F). No additional complication was observed during hospitalization and the patient was discharged after the follow-up period.

Discussion: Coronary stent dislodgement is a critical and lethal complication of PCI. In this case, a DES was implanted with T and small protrusion technique to diagonal branch and then final kissing balloon was applied after the balloon in diagonal branch was retracted proximally. After this final process and deflation of the balloons, the balloons could not be retracted from the vessels. While the entire system including two balloons and two guide wires were being pulled back, two stents in LAD were dislocated. Probably the balloon on LAD was interfered with the proximal stent during the last kissing process. The distal and the proximal stent were also interacted within the citrates and two stents were dislocated together during the process. Interventional cardiologist should be aware of possible complications of PCI and possible outcomes. Previous stent dislodgement cases mostly resulted in stent embolization but luckily and unlike others, in our case two stents came with the balloon and TIMI 3 flow was still present afterwards.

Keywords: Anterior myocardial infarction, drug eluting stent, percutaneous coronary intervention, stent dislodgement, stent migration.

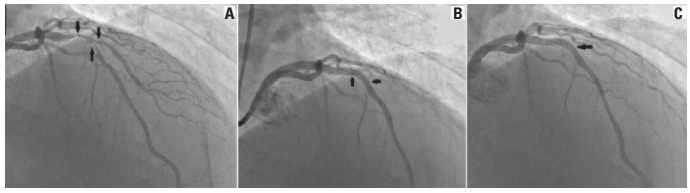

Figure 1. (A) LAD-Diagonal bifurcation lesion can be classified as 1,1,1 according to Medina classification. **(B)** After 3.5x15 mm drug eluting stent implantation (arrows), TIMI 3 flow was obtained left anterior descending artery. **(C)** Flow was lost at diagonal branch (arrow) after post dilatation of non-compliant balloon to the left anterior descending artery.

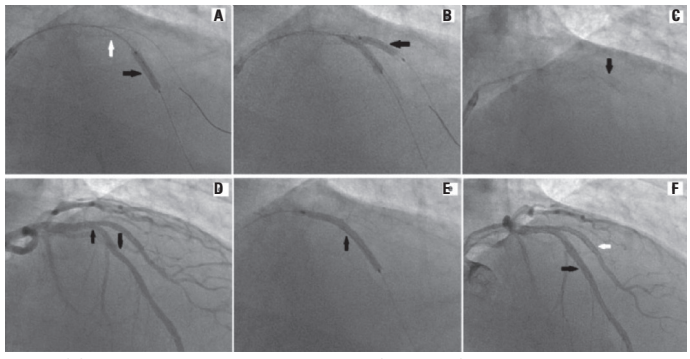

Figure 2. (A) 2.75x16mm drug-eluting stent was implanted (black arrow) starting from the distal part of the previous stent (white arrow). **(B)** 2.25x16 mm stent (arrow) was implanted to the diagonal branch with T and small protrusion technique. **(C)** Only the stent implanted at the diagonal branch can be seen (arrow). **(D)** No coronary dissection or rupture was seen at left anterior descending artery (arrow). **(E)** 2.75x38 mm drug-eluting stent was implanted into the LAD (arrow). **(F)** TIMI 3 flow can be seen at both left anterior descending artery (black arrow) and diagonal branch (white arrow) at the final pose.

SO-172

LAD chronic total occlusion concluded by reverse minimum overlapping culotte stenting technique of left main coronary artery

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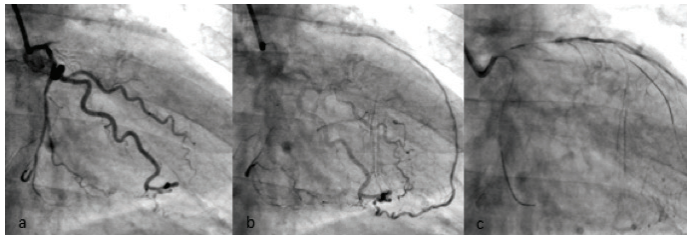
A 47 year old male patient was referred to our facility with acute inferior myocardial infarction and RCA was successfully revascularized. LAD was totally occluded just short of the ostium (Panel a). CX was 50% stenotic before the first OM. LAD was supplied retrogradely from the RCA and CX arteries (Panel b). Patient refused the baypass surgery, and revascularization of LAD CTO was planned in the other session. Patient underwent to the catheter laboratory during the hospitalization. Since retrograd collaterals from CX artery were existed and refilled the distal LAD, one femoral site was just gained. LAD was probably passed through invisible microchannels with hydrophilic guidewire (PILOT 50, ABBOTT) and microcatheter (NHANCER PRO X, IMDS) support (Panel c). Low profile balloons, 1.5x10 mm and 2.0x15 mm (SeQuent® Neo, BRAUN),and PTCA balloon 3.0x20 mm (Invader PTCA, Alvimedica) were performed after the microcatheter removal (Panel d). Then, 2.75x31 mm DES and 3.0x25 mm DES (CID, BioPmed) were inserted from distal to proksimal LAD; respectively (Panel e). However, due to almost ostial location of LAD CTO and plaque appearance in distal LM artery, proksimal stent were extended up to the ostial segment of the LM artery. 4.0x12 mm balloon dilatation (SIMPASS NCHP, SIMEKS) performed into the LM part of the LAD stent. However, plaque shifting occured towards to the ostium of CX (Panel f), and patient suffered from angina. Hence, CX revascularization was planned. CX rewired again with the hydrophilic guidewire which was previously used in LAD. 2.0x15 mm (SeQuent® Neo, BRAUN) balloon dilatation and 3.0x25 mm DES (CID, BioPmed) insertion were performed up to the short segment (1-2 mm) of LM bifurcation (Panel g). LAD was rewired again by CX guidewire by pulling back method and 2.0x15 mm balloon dilatation (SeQuent® Neo, BRAUN) was performed (Panel h). Kissing balloon dilatation by 3.0x25 mm (SIMPASS NCHP, SIMEKS) performed both into the CX and LAD arteries (Panel i). Procedure was concluded with proximal optimization of LM artery by 4.5x12 mm NC balloon (SIMPASS NCHP, SIMEKS) dilatation (Panel k). Final results showed successful TIMI 3 flow without additional complication (Panel l, m).

Keywords: Chronic total occlusion, angina, bifurcation, reverse culotte.



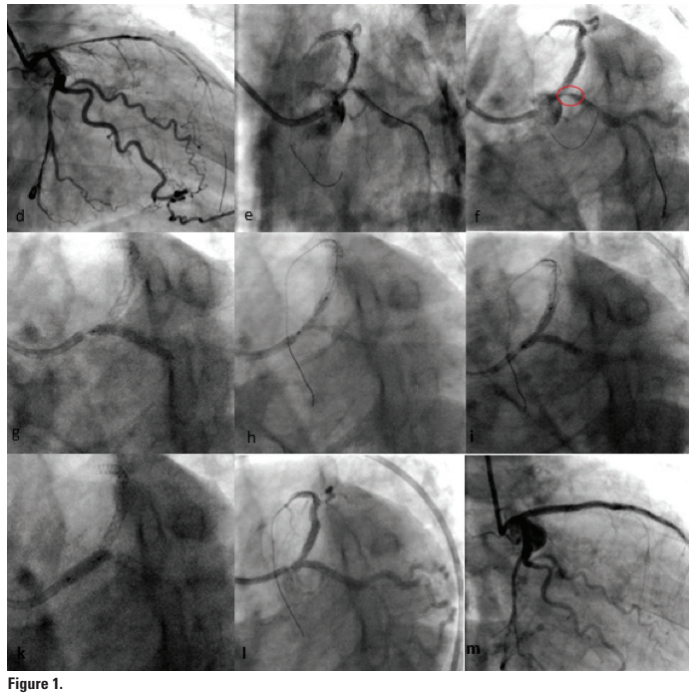


Figure 1.

SO-175

A broken heart afflicted by intensive care conditions: Takotsubo syndrome in the course of non ST elevation myocardial infarction

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Background: Takotsubo syndrome (TTS) is characterized with transient myocardial dysfunction which presents with clinical and laboratory findings of acute coronary syndrome (ACS). Although many stressor can evoked TTS, ACS and related stressor such as invasive procedures and intensive care unit (ICU) process may also provoked TTS. However simultaneous occurrence of TTS and ACS may generate diagnostic challenge. Furthermore according to Mayo Clinic TTS Diagnostic Criteria, presence of obstructive coronary artery disease is one of the exclusion criteria for TTS diagnosis. Conversely, a recent international expert consensus report on TTS declared that these two disease may coexist. Herein we present ACS (NSTEMI) case who suffered from TTS after stressful overnight ICU stay.

Case Summary: Seventy-five years old woman presented with typical chest pain and quite significant progression of troponin levels. ECG showed left anterior hemiblock and negative T waves in avL. The diagnosis of ACS have been made and invasive coronary angiography (CA) performed. CA showed that critical obstruction of right coronary artery (RCA) and nonsignificant lesions on LCx and LAD arteries. Culprit RCA lesion treated with drug eluting stent implantation without any complication. Final TIMI III flow obtained and patient transferred to ICU. After overnight stay in ICU she complained chest pain. Her ECG showed ST elevation and T inversions in precordial derivations. Echocardiography (ECHO) also showed severe LV anterior and apical wall motion abnormalities and presence of dyskinetic LV apex. Due to discordance between ECG/ECHO findings and ACS location, and typical ECG/ECHO evolution of the findings the diagnosis of TTS have been made. Complete recovery of ECG/ECHO findings confirmed at outpatient visit two weeks later. DISCUSSION: This case shows that TTS and acute coronary syndrome may coexist although some traditional criteria exclude this togetherness. However new diagnostic criteria have been proposed which allow the presence of obstructive coronary artery disease in the diagnosis of TTS. This case contributes the literature in terms of that TTS and acute coronary syndrome may coexist. Regarding to our case, Mayo Clinic TTS Diagnostic Criteria should be reviewed.

Keywords: Acute coronary syndrome, takotsubo syndrome, diagnostic criteria.

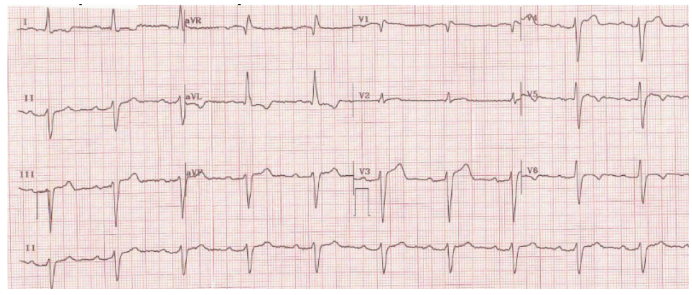

Figure 1. After the percutaneus coronary intervention. Newly emerging T inversion in aVL-V5-V6 and mild ST elevation in V2.

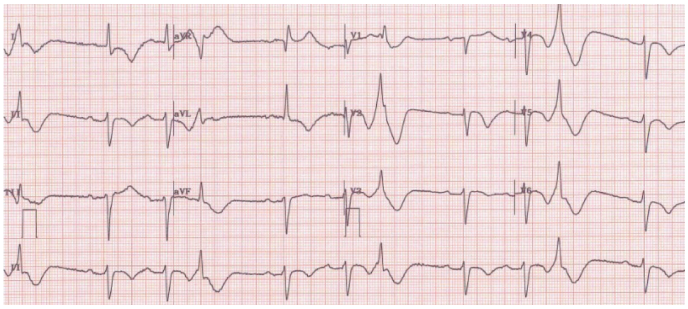

Figure 2. ECG before discharge. Newly emerging ST elevation in V4-V5-V6, deeper ST depression in D1-aVL, T inversion in D2-V2-V3.

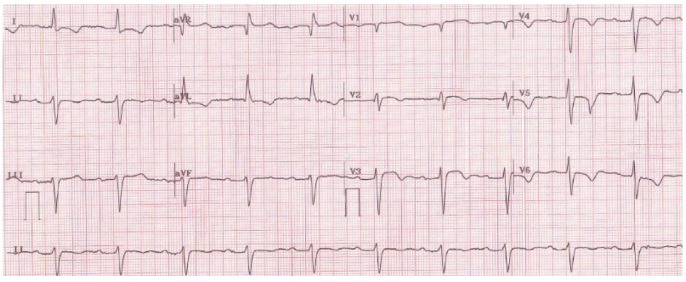

Figure 3. ECG next morning after percutaneus coronary intervention. Newly emerging T inversion in V4, moderate ST elevation in V2-V3 and ST segment depression in D1-aVL.

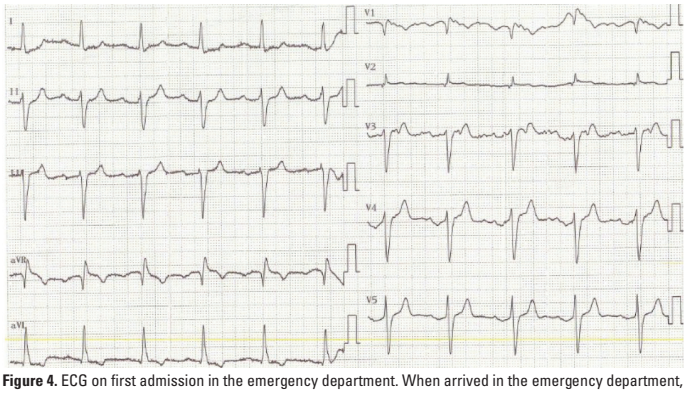

Figure 4. ECG on first admission in the emergency department. When arrived in the emergency department, there were the findings of left anterior hemiblock, T inversion in aVL in 12 lead ECG.

SO-176

Severe subclavian artery stenosis presenting as acute coronary syndrome: Is it a steal phenomenon?!

Elton Soydan, Azem Akıllı, Mustafa Akın

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A 74 years old male patients presented to our emergency unit with new onset chest pain. He had been experiencing transient orthostatic vertigo complains for the last 3 months. He had had a coronary bypass procedure 10 years ago and no coronary events afterwards. On admission he looked pale and frightened with severe discomfort and cold sweating due to retrosternal chest pain.Interestingly there was a difference of 40 mmHg between both brachial blood pressure measurements with a weak left radial pulse. Electrocaridiography (ECG) showed high amplitude in the precordial T waves with reciprocal ST segment depression in the inferior extremity derivations assuming ST Elevation Miocardial infarction. The patient was immediately transferred to the angiograpphy laboratory for percutaneous intervention. Coronary angiography was performed by the right femoral artery approach. The right coronary artery and the left anterior descending artery (LAD) showed chronic occlusive features.The obtuse marginal artery had a mid portion focal stenosis with no distal flow compromise. Aortography showed no open vein graft. Selective subclavian artery angiography revealed a high graded prevertebral stenosis (99%) with no antegrade left vertebral artery flow and very weak Left Internal Mammarian Artery hardly feeding the LAD area.Astonishingly almost all the opaque injected dyed the axillary artery as being a bigger artery thus stealing the blood flow from the vertebral and compromisisng the LIMA FLOW. Immediately A 7 French right Judkins guiding catheter was inserted into the left subclaivian artery and a balloon of 3,5*20 mm was placed through a 0,014 inch Floppy guidewire passing the stenotic lesions. During the predilation a bradyarhythmic reflex occured which was immediately intervened by placing a temporary pacemaker lead into the right ventricle. The residual stenosis was successfully recovered by implantation of a balloon expandable peripheral stent (8*17mm). Afterwards selective subclavian angiography showed recovery of the VERTEBRAL artery antegrade flow and normalized LIMA-LAD blood flow. After the procedure the patient's chest pain resolved and control ECG showed normalised ST segments.

Keywords: Subclavian artery, acute coronary syndrome, steal phenomenon, primary percutaneous intervention.

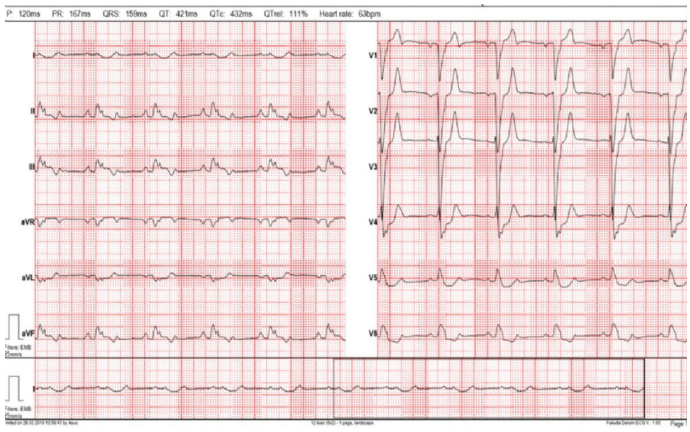

Figure 1. Electrocaridography on admission.

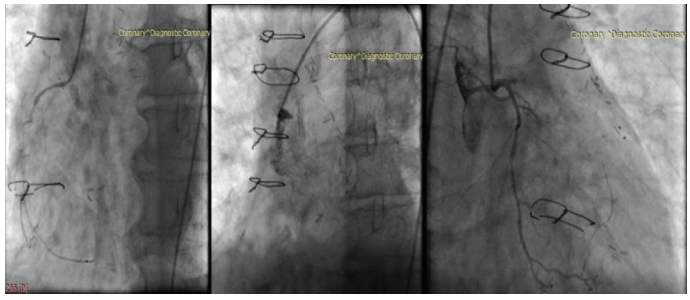

Figure 2. From left to right: Chronic occlusion in the right coronary artery, occlusion of sapheneous vein graft, proximal occluison of the LAD.

SO-178

Percutaneous closure of a complex fistula which originates from all coronary arteries and drains to the pulmonary artery

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60-year-old female admitted to our outpatient clinic with the symptoms of exercise-induced angina and dyspnea. Her relevant history included a drug-eluting stent (DES) implantation to left anterior descending (LAD) artery due to chronic coronary syndrome in 2013, surgical ligation of a fistula formation originating from LAD and draining to pulmonary artery (PA) in 2015, and failed percutaneous closure of the same fistula after recurrence in 2017. Her myocardial perfusion imaging (MPI) revealed moderate ischemia in apex, and transthoracic echocardiography (TTE) showed LVEF 50% and apical hypokinesia. Her medical treatment consisted of ASA 100 mg q.d., metoprolol 50 mg q.d., rosuvastatin 10 mg q.d. Computerized tomographic angiography (CTA) revealed a tortuous fistula (5 mm) originating from LAD proximal segment and draining to PA, tortuous fistula from the left circumflex artery (LCx) to PA and a small fistula formation between the right coronary artery and PA. We proceeded with an invasive angiogram, which not only confirmed the diagnosis but also allowed us to plan our interventional treatment strategy. Rather than an antegrade approach which failed in 2017, we preferred a retrograde approach via venous access that led to successful closure of the fistula formation with a single duct occluder in a relatively short time. The patient was discharged on the next day without any complication.

Keywords: Coronary fistula, duct occluder, percutaneous closure.

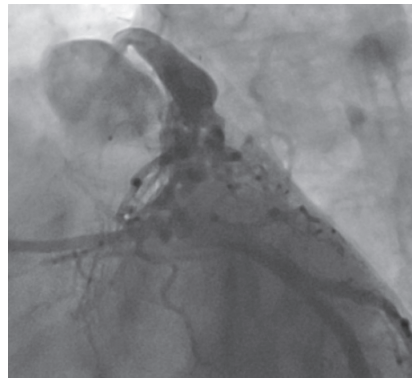

Figure 1. Coronary to pulmonary artery fistula.

Figure 2. Retrograde cannulation of the fistula.

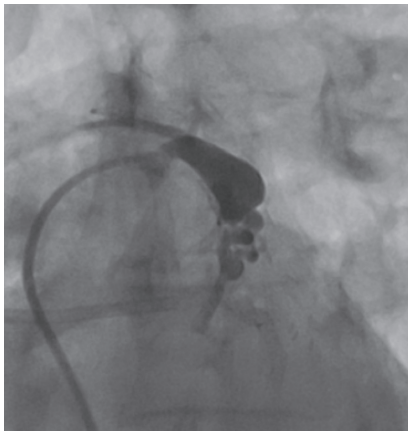

Figure 3. Image of the fistula via retrogradely placed sheath.

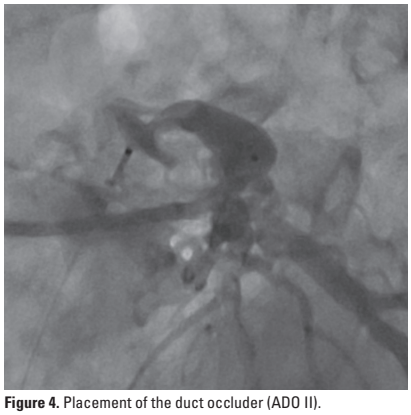

Figure 4. Placement of the duct occluder (ADO II).

SO-179

Successful intervention of a total subclavian artery occlusion

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A 78 years old male patient was referred to our clinic with diziness complaint having been for one year. On admission there was a 40 mmhg diference between both brachial systolic blood pressure with a low pressure in the left arm. interestingly it recognized that the patient had left arm claudication while physical activity. Doppler ultrasonography revealed no flow in the subclavian artery region at the left suprasternal area implying an occlusion of the subclavian artery and no flow in the left vertebral artery. Selective angiography by a right transfemoral artery approach showed total occlusion of the left Subclavian artery with no antegrade flow in the distal part of the left arm. In order to reveal out the length of the occlusion a right Judgkins diagnostic catheter was advanced through the left distal radial artery and a simultaneous opaque injection form both the left Axillary and Subclavian artery showed a short total occlusion area. With the support of a 5French (Trailblazer) microcatheter and the coordination as a reference of the right Judkins diagnostic catheter placed in the Axillary artery made possible advancing of the 0,01 inch Nitrex guidewire into the lumen of the left axillary artery. After a predilation with a 5*40 mm balloon the resiual stenosis was successfully resolved by the implantation of a balloon expandable stent of 9*37 mm dimensions. FİInal angiography revealed the antegrad flow of the Vertebral artery and the left internal mammarian artery. After the procedure the difference of systolic blood pressure between the 2 arms was diminished to 5 mmHg.

Keywords: Subclavian artery occlusion, percutaneous intervention, balloon expandable stent.

SO-181

Percutaneous closure of an iatrogenic ventricular septal defect associated with transcatheter aortic valve implantation

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An 81 year old man who had dyspnoea was admitted to our hospital with diagnosis of severe aortic stenosis. A transcatheter aortic valve implantation was successfully performed with a 29mmEdwards Sapien XT valve via transfemoral access. After the procedure, the echocardiography showed a restrictive ventricular septal defect (VSD) in the membranous septum. Since the patient had no symptoms, the decision to follow up him conservatively was made. However, he was readmitted within 3 weeks because of shortness of breath and peripheral edema. A control echocardiography revealed membranous VSD, 8 mm in size, right chambers' dilatation with moderate tricuspid regurgitation, and systolic pulmonary artery pressure of 60 mm Hg. Previously deployed aortic valve was normal in function. The decision to perform a percutaneous VSD closure was made. The defect was then closed with a 10 mm muscular VSD occluder (AGA Medical Corp, Plymouth, MN, USA). During and after the procedure, there was no dysfunction in the bioprosthetic aortic valve. At one year follow-up, the patient was still asymptomatic.

Keywords: Iatrogenic ventricular septal defect, transcatheter aortic valve replacement, percutaneous closure.

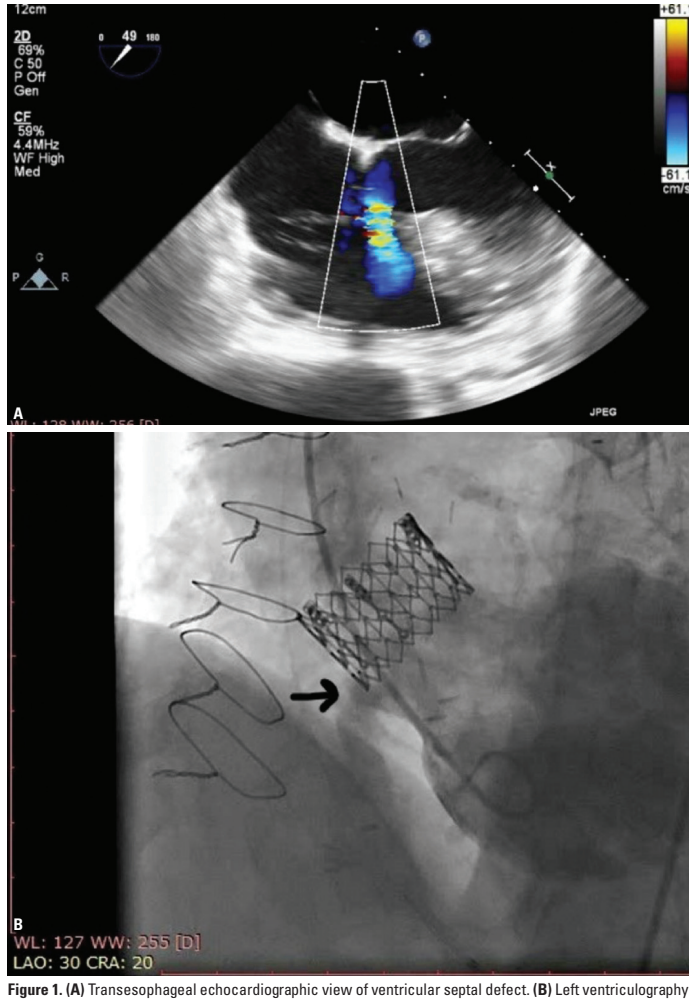

Figure 1. (A) Transesophageal echocardiographic view of ventricular septal defect. **(B)** Left ventriculography in left anterior projection. Arrow indicated septal defect.

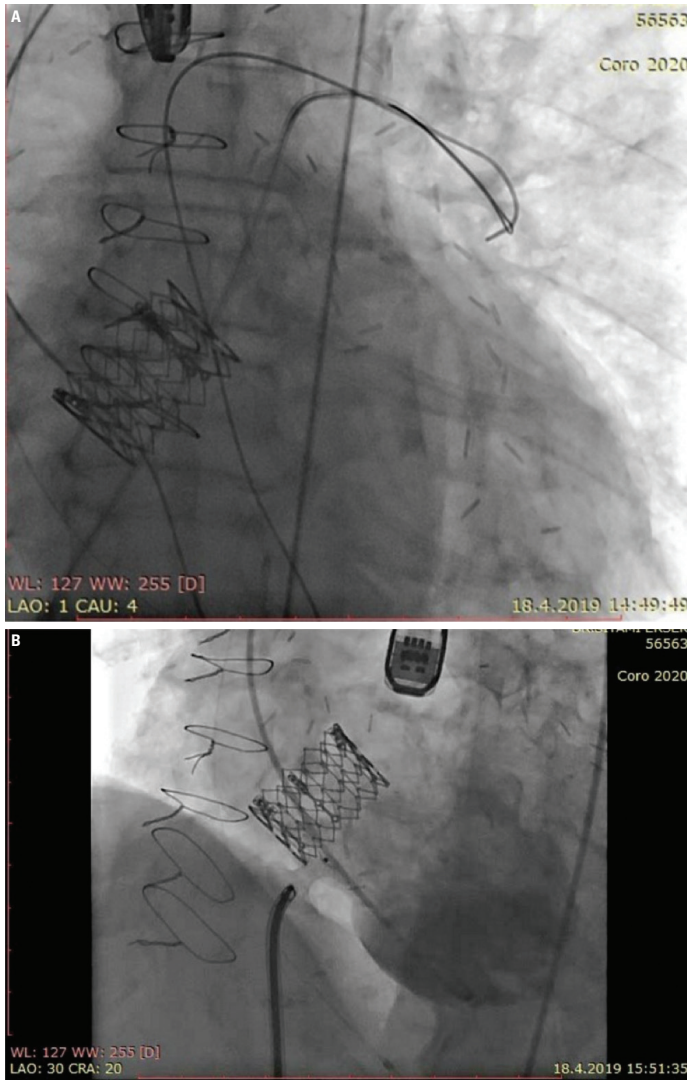

Figure 2. (A) Wire captured with snare in the pulmonary artery. **(B)** Closed the defect with 10 mm muscular VSD occluder.

SO-182

Successful management of left anterior descending artery rupture following percutaneous coronary angioplasty: The end of patience is salvation

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Introduction: Coronary artery perforations (CAP) are one of the complications that can be mortal during percutaneous coronary interventions. Material selection and determination of strategy in terms of perforation before coronary intervention is important in reducing the risk of perforation. In this report we present Ellis class III coronary perforation after percutaneous transluminal coronary angioplasty due to inappropriate balloon diameter. The patient was treated with repeated prolonged balloon inflation.
Case Report: A sixty-year-old female patient was admitted to our hospital with chest pain that lasted for 3 days, and she was hospitalized in coronary intensive care due to subacute anterior wall myocardial infarction (MI). The patient's blood pressure was 140/90 mmHg heart rate 100 bpm. ECG had sinus rhythm v1-v5 QS pattern and T wave negativity, On echocardiography EF 30%,akinesia in anterior wall and apex, moderate mitral and tricuspid insufficiency were observed. On lung examination sounds were in broncho-alveolar character, ral roncus was not heard, abdominal examination was found naturally. Her medical history included Type 2 diabetes mellitus, hypertension and hyperlipidemia, and she was taking metformin, aspirin, atorvastatin 20 mg, ramipril 5 mg. Coronary angiography (CAG) was planned for the patient. In CAG, LAD was detected to be completely occluded from the proximal part. In the same session, PCI was planned. 7000 IU unfractionated heparin was administered iv. The lesion was crossed with a 0.014 inch soft wire by the balloon support, the diagonal branch was also wired with a 0.014 mm wire, and the lesion was inflated with 14 atm with 1.5 x 20 mm and 2.0 x 20 mm balloons. A 2.75 x 24 mm drug-eluted stent implanted at 12 atm pressure. Since TIMI III flow was not available and also a lesion was detected distally to the stent. In order not to waste time, stent balloon was inflated at 12 atm, and a class III coronary perforation was detected in the control CAG, creating a contrast transition to the pericardial space. Although the patient had symptomatic chest pain during PCI, her hemodynamic status was stable. Minimal pericardial effusion was detected in transthoracic echocardiography (TTE). The balloon used in stenting was inflated at 10 minutes, 5 minutes and 5 minutes at a lower pressure throughthe perforated segment. No contrast leakage was observed in the last control CAG. The patient had mild pericardial effusion on the control echocardiography that performed the following day and than she discharged. Pericardial effusion was not observed in the TTE examination of the patient who was asymptomatic at the control visit after one month later.
Conclusion: In percutaneous coronary procedures, it is necessary to determine the risks of complications well before the procedure. High inflation pressures during stenting can cause stent edge dissection and.
Keywords: Coronary artery perforation, angioplasty, stenting.

SO-183

Successful thrombectomy procedure in acute upper extremity deep vein thrombosis: The efficiency of the Angiojet cahteter system

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A 45 years old female patient presented to our clinic with swelling of her right arm. Four days ago she had experienced a slight brunt of her right arm while cooking in her house. Her medical history consisted of a sinus cavernosus thrombosis last year treated with anticoagulation which was stopped after 3 month treatment. On admission her right arm was extensively swollen and very sensitive during slight palpation. Peripheral artery pulses were normal bounded. Doppler ultrasonography showed no compressibility in the distal axillary vein area implying a thrombus formation. Patient was transferred to the angiography laboratory for diagnosis/treatment purposes. A selective vein angiography by a right Judkins diagnostic catheter through a right femoral vein approach revealed total occlusion of the Brachial vein. After transpassing the lesion with a 0,035 terumo guidewire a 6 French Angiojet (Solent Omni) thrombectomy cahteter system was introduced into the thrombus area and a simultaneous thrombus fragmentation and back aspiration into its side holes led to opening of the Brachial and distal Basilic and Cephalic veins confirmed by distal tip opaque injection of the Angiojet catheter system. Interestingly genetic tests evaluation for thrombophylia showed Factor XIII V34L and GPIIIaL33P(HPA-1) homozygous mutation necessitating lifelong anticoagulation. After1 month of rivaroxaban 20mg (once a day) the patient's right arm was totally recovered with no swelling at all.
Keywords: Upper extremity deep vein thrombosis, Angiojet thrombectomy, thrombosis predisposition.

SO-184

An alternative solution for the uncrossable microcatheter problem in retrograde CTO case is to cross the lesion directly with RG3

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A 68-year-old male patient presented with the typical angina of CCS II, which has been going on for the last 1 year. Her medical history included Hypertension and Diabetes Mellitus. There was no feature in his physical examination. On electrocardiography, there was no pathology other than T negativity in leads V1-4. On echocardiography, EF was 50% apex and mild hypokinetic. On the coronary angiography of the patient, the left anterior descending artery (LAD) was fully occluded in middle part, Circumflex (CX) and right coronary artery (RCA) had noncritical plaques. Also, LAD was filled retroactively from RCA (Rentrop class III). The entry was started with a bifemoral route. 7F EBU guiding was used for the left coronary artery and JR4 diagnostic catheter was used for the right coronary artery. With dual injection, the proximal head of the blunt calcific CTO segment was displayed immediately adjacent to the diagonal artery in the middle part of the LAD. It was decided to start the process antegrade. The distal lumen could not be reached with Gaia 2nd and conquest pro 12 wires first accompanied by Caravel microcatheter (MC) after heparinization at the appropriate dose. It was decided to continue retrograde operation in the same session. The right diagnostic catheter was replaced with 7F AL1 catheter and LAD distal was reached with 150 cm Corsair pro MC and sion black wire with septal collaterals. The lesion was passed retrograde with Gaia 3rd wire. However, the lesion could not be crossed with MC. Although Gaia wire was passed through the aorta and caught with snare, MC could not be passed, and replacement with extension wire could not be achieved. The procedure was terminated unsuccessfully. The patient was reworked with low profile Turnpike LP 3 weeks later. Although the lesion was passed with Gaia 2nd wire again retrogrades, MC did not pass the lesion as in the previous procedure. After that, the process was continued as antegrade again. It was not successful. Finally, it was attempted to pass directly from the retrograde channel with RG3 wire, which is an extension wire of 300 cm. After the trials, CTO segment with RG3 was passed retrograde. After the wire was removed from the opposite femoral with the help of snare, antegrade processing was continued. Although the CTO segment was recanalized after balloon dilatations, a large number of dissections were observed in the distal LAD segment, which was thought to have occurred during antegrade procedure. Therefore, the vessel was left to heal without stenting. The CTO segment of the patient, who was re-treated four weeks later, was again completely occluded. Balloon dilation was performed after passing the lesion as antegrade. Stenting was performed by seeing that the distal segment was partially healed. For the LAD-Diagonal bifurcation, the procedure was terminated using DK-CRUSH technique.
Keywords: RG3, CTO, retrograde.

SO-185

All in one: Transcatheter aortic valve implantation in a case with narrow femoral arteries, low ejection fraction, mechanical mitral valve and short aortico-mitral continuity

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A 71 years old woman was referred to our clinic for transcatheter aortic valve implantation (TAVI) with the complaints of severe dyspnea, palpitation and heart failure symptoms. Patient was operated due to severe mitral regurgitation and mechanical mitral valve replacement had been done ten years a go. She had undergone cardiac resynchronization therapy (CRT) 2 years a go but non responder to CRT. Low flow low ejection fraction aortic stenosis was detected and Dobutamin stres echocardiography showed severe aortic stenosis. Our heart team's decision was TAVI due to high STS and high logistic euroscore. However, cardiac computorized tomography (CT) and aortography in left caudal view showed a short aortico-mitral space

as 4 to 5 mm. Aortic annulus was measured as 21,5 mm and sinus valsalva diameters were, 27,7, 26,6 and 28,5 respectively. Patient's bilateral femoral arteries were narrow (4,2 mm). Due to narrow femoral arteries and short aortico-mitral space, we decided to make a higher implantation of an Evolut R either using cusp over lap and classical high implantation techniques with the combination of crossover safety guidewire approach. First, a safety guidewire was inserted by croossover technique after two proglide insertion to the right femoral system and a 26 mm Evolut R was succesfully implanted with cuspover lap and high implantation techniques under TEE guidance. No interaction between the TAVI valve and mechanical valve observed. However, severe hypotension was observed after the removal of the 14 F TAVI sheat. An acute dissection of the right iliac artery was detected and a covered stent was quickly implanted over the safety guidewire without any complication. In conclusion, measurement of aortico-mitral space is essential for TAVI in patients with mechanical mitral valve prosthesis. Left caudal view is the most important view to control the interaction between the TAVI valve and mechanical valve. Intraoperatif TEE is very useful to see any interaction between the TAVI valve and mechanical mitral valve. A self expandable valve may be a more useful TAVI valve in patients with mitral prosthesis since it can be retrievable and recapturable if any interaction observed.
Keywords: TAVI, mechanical mitral valve, narrow femoral arteries.

SO-186

Successful transradial drug-eluting stent implantation in a male patient with dextrocardia: a case report

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62 year-old male admitted to our clinics with the complaint of chest pain It was learned that he was smoking approximately for 40 years. He had not any other risk factor. Physical examination: BP: 140/80 mm Hg, Pulse rate: 84/min, Cardiac apex was on the right side.There was no extra sound or murmur with cardiac auscultation. Liver was not palpable Extremity exam. showed patent distal peripheral vessel and no edema. Lab. Examination Fasting blood sugar: 94 mg/dl. BUN: 16 mg/dl, Creatinine. 0.9mg/dl, Total cholesterol: 169 mg/dl, HDL: 34 mg/dl and LDL-C: 134 mg/dl Troponin and CK-MB were within normal limit. Chest X-ray showed clear lung fields and dextrocardia. ECG was completely normal. Echocardiographic exam showed normal left ventricular systolic function. There was no MR and TR. Myocard perfusion scan showed no ischemia but coronary CT angiography was pathologic. Severe stenotic lesions were present both proximal LAD and Cx. RCA was dominant and has no stenosis. Coronary angiography proved the same lesions (Figure 1, 2) and PCI was planned later. Right radial artery was used for access route. By using 6F EBU size 4 guiding catheter, predilatation was performed for both lesions with 2x15 mm monorail balloon and (DES) 3x32 mm stent was implanted for Cx artery stenosis at 18 atmospher and subsequently postdilatation was done with 3.5X18 mm Nc balloon. For LAD lesion 2.5x20 mm (DES) stent was implanted.and postdilatation was performed with 2.75x12 mm NC balloon /Figure 3) The result was excellent.
Discussion: Even though dextrocardia occurs rarely, these people have similar incidence of coronary artery disease like normal population. Because of unfamiliarity with the reverse anatomy transradial coronary angiography and angioplasty is seldom tried in these patients. Percutaneous coronary intervention (PCI) in these patients is technically difficult because of the mirror image of organs. This case suggested that the interventional management of such patients follows the same general rules as for non-dextrocardia patients,The left coronary artery (LCA) was cannulated with clockwise rotation of the catheter, while taking the right anterior oblique 45° projection position. The catheter was rotated counterclockwise for cannulating the right coronary artery, instead of the usual clockwise approach. During the RCA angiography, the projected position needed to be changed to the left anterior oblique 45° projection position, while the head and foot projection position did not need to change.ion of the catheter and projection position choices need to be taken into consideration to obtain optimal benefits for the patient. In conclusion, interventional management of dextrocardia patients follows the same general rules as for non-dextrocardia patients, but some technical details, such as the mirror image, different manipulation of the catheter and projection position choices should be taken into consideration to obtain optimal benefits for the patient.
Keywords: Dextrocardia, PCI, stent.

SO-187

A rare complication after endovascular aortic repair (EVAR) procedure: Subtotal stenosis of the distal abdominal aorta

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Although the standard treatment of abdominal aortic aneurysms is surgery, endovascular stent-graft (EVAR) procedure can also be applied to selected patients, since it has been accepted as a minimally invasive method in recent years. Endovascular method is used commonly in patients with high comorbidity, especially emergency cases. Studies have also shown that endovascular repair reduces mortality in the first month when compared to elective surgery. Herein, we tried to present the management of a rare complication during the EVAR procedure. An abdominal aortic aneurysm was detected in a 68-year-old male patient, whose operation was planned due to lung cancer with known diabetes, hypertension and chronic kidney failure diseases. Abdominal CT angiography showed an aneurysm that originated 30 mm below the infrarenal level and reached up to 63 mm at its widest part, and the distal aorta diameter was measured as 18 mm. Although patient was allowed to be operated due to lung cancer, thoracic surgeons declined to perform the operation. It was firstly decided to perform an EVAR procedure by a team including pulmonologist, cardiovascular surgeon and cardiologist, and then lung surgery. Vascular access was done with surgical cut-down from both femoral arteries. A 20F sheat was placed on the right femoral artery and a 14F sheat on the left. A pigtail catheter was placed on the right side using an extra stiff wire and anjiography was performed (Figure 1). Main body graft-stent was placed through the same wire (Figure 2). It was tried re-wiring with 0.018 mm wire from the left side but despite several attempts, re-wiring failed. Subtotal stenosis was observed in the left common iliac artery ostium involving the distal aorta, via 6F sheat from the left radial artery (Figure 3). Subtotal stenosis was passed using a 0.014 mm soft wire through the left femoral sheat. The pigtail catheter was advanced over this wire and the wire was exchanged with a 0.035 mm stiff wire. The other part of the graft stent was implanted. It was postdilated with aortic balloon due to residual stenosis in the implantation site (Figure 4). Complete flow was observed in the left common iliac artery ostium in the control angiography (Figure 5). As a result, although the complications after the EVAR procedure frequently develop in the late period, it may rarely occur in the early period. Although these are complications such as stent migration and peripheral embolism, rarely iliac artery occlusion after stent implantation can also occur as in our case. It is important to evaluate CT angiography images well before the procedure. When evaluating patients for compliance with the EVAR procedure, it should be kept in mind that the distal aortic diameter should be larger than 20 mm.
Keywords: EVAR, complication, abdominal aortic aneurysms.

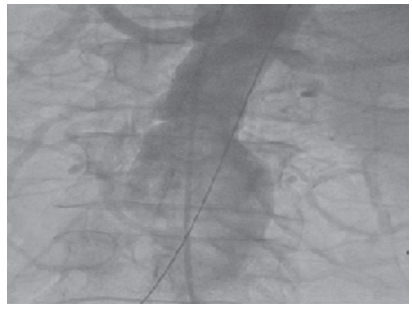

Figure 1. Angiography image of aneurysm before EVAR procedure.

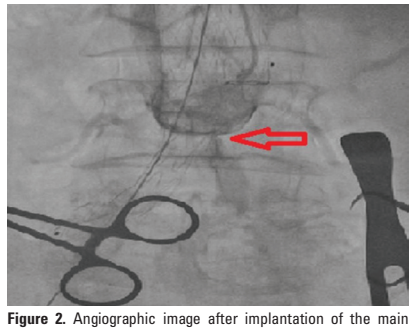

Figure 2. Angiographic image after implantation of the main body graft stent.

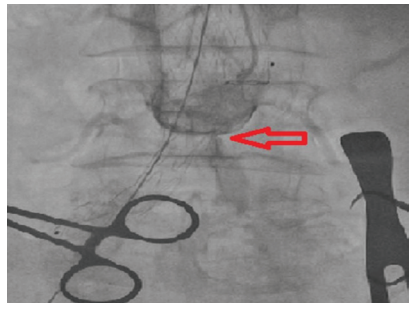

Figure 3. Subtotal Stenosis of the distal abdominal aorta.

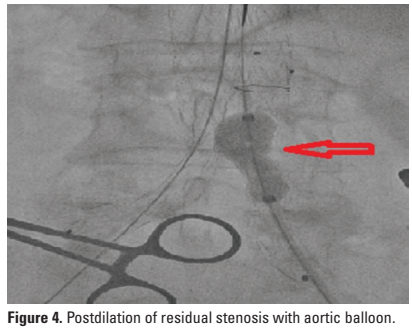

Figure 4. Postdilation of residual stenosis with aortic balloon.

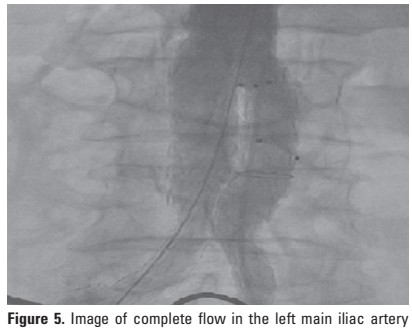

Figure 5. Image of complete flow in the left main iliac artery ostium.

SO-189

A rare cause of LMCA thrombosis presenting with acute coronary syndrome and cardiogenic shock: Hereditary thrombophilia

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Acute coronary syndrome due to left main coronary artery (LMCA) thrombosis is a rare clinical condition with high mortality. Its incidence in patients with acute coronary syndrome is estimated to be 0.8%. Acute thrombosis of LMCA occurs due to different etiologies such as primary hypercoagulability, dissection due to blunt trauma to the anterior chest wall, iatrogenic dissection during catheter interventions and primary atherosclerosis. A 37-year-old male patient with a known history of venous thromboembolism was admitted to the emergency service with the complaint of chest pain and shortness of breath. Blood pressure: 80/40 mmHg, pulse 110 / min, widespread inspiratory rales up to bilateral middle zones in the lungs, and VG-V4 ST segment elevation of ECG was detected in the patient and coronary angiography was performed with the diagnosis of acute ST and anteroseptal myocardial infarction and cardiogenic shock. It was observed that LMCA was 100% obstructed from osteal in the patient with normal RCA. Dense thrombus in the LMCA ostium was visualized with the mechanical effect of the catheter and rapid opaque pushing. GpIIb-IIIa antagonist (tirofiban) intracoronary slow bolus was loaded into the dense thrombus lesion and thrombus aspiration was performed with a thrombus aspiration catheter. Although taken control films revealed reduced volume of the thrombus; 4.5x9 mm bare metal stent was implanted, since it was determined that the entire left coronary system was blocked for blood flow and the patient waa hemodynamically stable. The image of thrombus in the LMCA disappeared and there was no residual lesion. It was learned that MTHFR (C677T and A1298C) and lupus anticoagulant confirmation test were positive in the thrombophilia screening performed two years ago due to portal and mesenteric vein thrombosis. The patient was discharged by prescribing acetyl salicylic acid 100 mg / day + clopidogrel 75 mg / day and warfarin 5 mg / day. Hereditary thrombophilia history was found in 40% of thrombosis cases in etiology. Hereditary thrombophilia should be considered in patients who develop thrombosis at a young age, have recurrent venous thromboembolism, positive family history for thrombosis, arterial thrombosis, heparin resistance, warfarin-induced skin necrosis, estrogen use and thrombosis during pregnancy. In cases with hereditary thrombophilia, it is recommended to study factor V Leiden and prothrombin G20210A mutations, protein C, protein S, antithrombin III and homocysteine gene mutations for screening purposes. Treatment options in the literature include emergency coronary artery bypass grafting, stent implantation, intracoronary thrombolysis, heparin anticoagulation or glycoprotein IIb / IIIa inhibitors, and thrombus aspiration as reperfusion strategies. It seems difficult to provide suggestions with strong evidence levels due to the low number of patients diagnosed and the anatomical features of patients and differences in clinical presentation.

Keywords: Hereditary thrombophilia, LMCA thrombosis, MTHFR C677T.

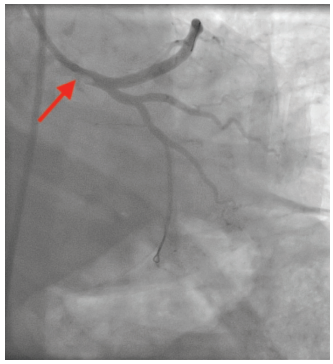

Figure 1. LMCA thrombosis after intracoronary aspiration.

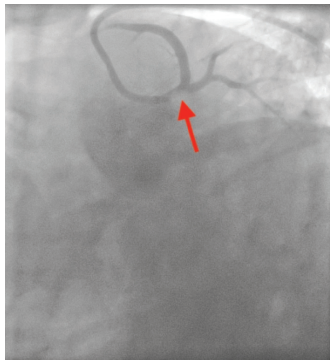

Figure 2. LMCA thrombosis after intracoronary aspiration, second view.

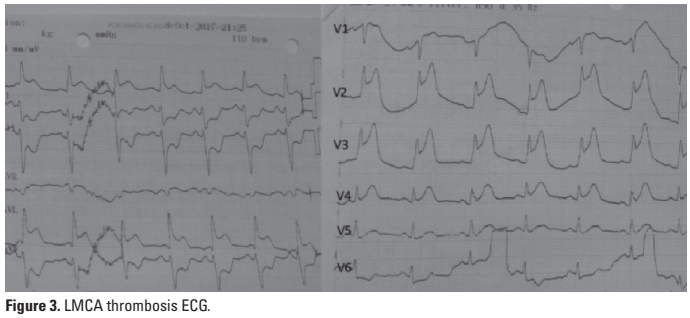

Figure 3. LMCA thrombosis ECG.

Figure 4. LMCA thrombosis, after stenting.

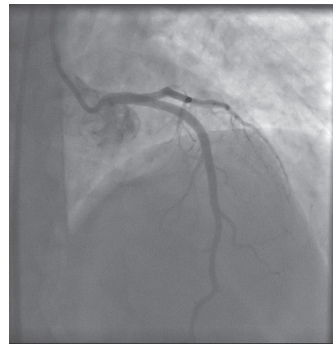

Figure 5. LMCA thrombosis, after stenting, second view.

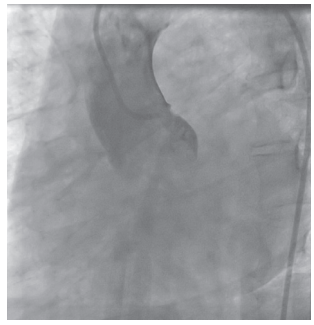

Figure 6. LMCA thrombosis, first view of coronary angiography.

Table 1. Results of thrombophilia screening

	Value	Reference range
Lupus anticoagulant screening	47,879	Result flag 16
Lupus anticoagulant confirmation	1,208	0,8-1,2 second
Antithrombin III activity	118,937	79,4- 112 %
Protein C activity	120,345	70-140 %
Protein S activity	111,338	60- 130 %
MTHFR C677T	Heterozygous positive	
MTHFR A1298C	Heterozygous positive	
Factor V Leiden mutation	Heterozygous positive	
JAK2V617F	Negative	
Prothrombin gene mutation	Negative	
Homocysteine	6.5 µmol/L	

SO-191

Revascularization of 3 chronic total occlusions and left main coronary artery occlusion in one session with anterograde-retrograde route and double nano-crush technique

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A 65-year-old male patient with a history of diabetes mellitus, hypertension and coronary artery bypass surgery in 2002 applied to our clinic with the complaint of grade 3–4 angina pectoris according to Canadian Cardiovascular Society angina scale.
He had a history of two times percutaneous intervention for the ostial stenosis of saphenous sequential graft (obtuse marginalis [OM2-OM3] and posterolateral [PL] branches). The patient, who were under optimal medical treatment at the time of admission, had 2 mm ST depression in V4-6 on his ECG and his ejection fraction was 55% on his echocardiography. We performed a diagnostic coronary angiography again and we demonstrated an in-stent restenois in the sapheneous graft. Due to the poor response of the saphenous sequential graft to the drug eluted stents, we planned the revascularization of the native circumflex (Cx), 2 major OM and PL branches.
Cx lesion was attempted to be crossed by anterograde route by engaging the left main coronary artery with left EBU guiding catheter, but was not successful. Thereupon, the patient's saphenous sequential graft was

engaged with 6F guiding catheter and we reached to the proximal part of the Cx artery via the retrograde route. Anterograde dissection was created with Conquest 12 guidewire from Cx ostium to retrograde guidewire. Finally, 2 guidewires were met with each other. After this, Cx was pre-dilated several times. It was observed that there were very large dissections in the body of Cx artery. After many attempts we finaly reached the true lumens of the 2 major OMs by using the STAR technique. First, the bottom PD branch was ballooned, followed by bifurcation stenting with 2 nano-crush bifurcation stenting technique to the 2 major OM and Cx main body. After applying the necessary proximal optimization techniques, the left main coronary artery was completely stented to the ostium. Complete revascularization was achieved in the left main coronary artery, 2 OM and PD branches. As a result, 3 old chronic total occlusions, Cx body and 2 large OM, were revascularized in a single session. In the process, 2 different nano-crush techniques were used. The patient's symptoms regressed at the 1-month follow-up. The entire intervention lasted 8 hours and 15 minutes without interruption.

Keywords: Chronic total occlusion, nano-crush, retrograde.

SO-194

TAVI experience in bioprosthetic severe aortic regurgitation

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Evidence is growing that TAVI is beneficial in the treatment of isolated severe aortic regurgitation.We will also share our TAVI experience in a case with acute ischemic hepatitis developed as a result of bioprosthetic dysfunction with severe aortic insufficiency. A 79-year-old male patient with a history of paroxysmal atrial fibrillation,who underwent CABG + bioprosthesis AVR (hancock 2) in 2009, was hospitalized 3 times in the past month due to decompensated heart failure. The general condition of the patient, who was referred to our clinic for advanced examination and treatment, was at NYHA class 4 level. He had ortropnea and paroxysmal nocturnal dyspnea. Thin crepitan rales were in lower and mid lung zones. The proBNP, ALT and AST levels of the patient were 10200 pg/ml,689 IU,606 IU respectively. In the gastroenterological evaluation of the patient, it was found that this liver function disorder was compatible with liver congestion due to heart failure. In the first echocardiographic evaluation, the ejection fraction was 46%. The gradient was detected on the bioprosthetic gradient was 22/45 mmhg. AVA / BSA: 0.9 cm^2 /m^2 and aortic regurgitan pressure half-time was 188 ms. Pulmonary artery systolic pressure (PASP) was 72 mmhg. The patient was evaluated as low flow low gradient severe aortic stenosis and severe aortic regurgitation. Valve in valve TAVI decision was taken to the patient whose Logistic Euroscore value was 47. The patient was made euvolemic with intensive diuretic treatment applied within days. 23 mm valve (Core valve Medtronic) was implanted to the patient via the left femoral artery. No complications were observed in the procedure. Paravalvular leakage was not observed in the perioperative transthoracic echocardiographic evaluation. Aortic regurgitation was not detected in the aortic valve in the control echocardiographic evaluations of the patient after the procedure, and a 10/19 mmhg gradient was detected on the valve. PASP decreased to 42 mmhg. The patient's diuretic need was significantly reduced. ALT AST levels decreased to normal limits after the procedure.The proBNP level decreased to 1230 pg/ml. In the first week control, the functional capacity was class 1 level. The important problems of TAVI procedure in isolated aortic insufficiency are that in the absence of sufficient calcification in the aortic annulus and valve, the bioprosthetic valve will not be able to hold enough and more susceptibility to complications such as valve malposition, deep-seated, pop-out. However, in degenerated bioprosthetic valves, especially if it is stented, suitable localization can be provided easily for the valve placement, and also serves as a body for holding the new bioprosthetic valve more securely. As a result, TAVI, which is a favorite treatment option in advanced aortic stenosis, can also be a safe and effective treatment option in dysfunctional bioprosthetic valves accompanied by appropriately selected severe aortic insufficiency.

Keywords: Aortic bioprosthesis, Aortic regurgitation, TAVI.

SO-195

Two different types of coronary rupture in the same patient

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Two different types of coronary rupture in the same patient Coronary artery perforation (CAP) is a life-threatening complication during percutaneous interventions (PCI). In this report, we discussed a patient having two different Ellis class II CAPs which were occurred spontaneously during index PCI. One of them is occurred at the distal site of the implanted stent and the other one at the tip of coronary wire. A 75-year-old female patient was hospitalized due to non ST elevation myocardial infarciton. Her physical examination, laboratory parameters and electrocardiographic findings were normal. She had no history of documented coronary artery disease. Diagnostic coronary angiography was planned for the patient. The angiography demonstrated a critical lesion at the bifurcation of a bifid Left Anterior Descending artery (LAD). After discussion with our cardiovascular surgeons, we planned to perform PCI. First, we inserted a 7 F sheath to the right femoral artery. A 3.5 left extra back-up guiding catheter was selected to Left Main coronary artery and a 0.014 inch floppy wire was inserted to the LAD and another one was inserted to the well-developed diagonal branch. First, a 2.75x28 mm drug eluting stent was implanted to the diagonal branch. In control image, there was an Ellis tip II CAP at the distal site of the stent. An immediate the patient complained of severe chest pain. First, we performed a prolonged balloon dilatation at nominal pressure just above the ruptured segment with a 2.75x15 mm coronary balloon. The follow-up left coronary angiogram revealed still a leakage of contrast agent. So, a stent-graft 15 mm in length was implanted immediately in the site of the rupture. After graft stent, complete restitution of blood flow in the LAD and termination of extravasation into the pericardial space was achieved. But, we recognized another CAP at the distal diagonal segment. Repeated prolonged balloon inflation was performed at the grafted segment and Protamine sulfate (50 mg) was administered intravenously to reverse the effect of heparin. Transthoracic echocardiography in the catheter laboratory and one day after the PCI procedure showed minimal intrapericardial fluid but no progression was observed. This is the first case in literature that different type of CAP is seen in a patient during index PCI procedure. The rupture in this case may have occurred due to advanced age, high-blood pressure during the PCI, relatively small diameter of the vessel, and the fragility of the vessel secondary to advanced age. Traditional management of CP consists of prolonged balloon inflation (proximal to or at the site of perforation to prevent tamponade) and reversal of anticoagulation with protamine. On the other hand, a stent-graft for emergency implantation in case of CP is a safe and effective alternative to the surgery in hemodinamically instable patients.

Keywords: Coronary artery perforation, Angioplasty, graft stent, prolonged balloon.

SO-196

Incidentally diagnosed multiple coronary fistulae presenting with Wellens' syndrome

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Case: A 68-year-old man presented to our out-patient clinic for the evaluation of cardioembolic source after having ischemic TIA. He denied any cardiac symptoms. He was receving ASA 100 mg, zofenopril 30 mg qd, oral antidiabetic agents. Vital findings were normal. He had hypertension and diabetes mellitus. His routine laboratory as well as echocardiography findings were unremarkable. His electrocardiogram showed T wave inversions in the anterior and lateral leads (Figure 1). We proceeded with coronary angiography due to his risk factors and ischemic changes on the ECG. His coronary angiogram demonstrated that the left descending artery (LAD) was type III with prominent septal branches distally, multiple fistulae into to the left ventricle, and opacification of the left ventricular cavity via these fistulae during diastole. No other significant coronary obstruction was detected in the coronary arteries. Because as he was asymptomatic and had diffuse fistulization into the left ventricular cavity we decided to follow him on medical therapy which included a beta blocker, ACE-I, ASA, and a statin.

Discussion: Coronary artery fistulas (CAF) are classified under the title of coronary artery termination anomalies and are defined as the drainage of epicardial coronary arteries to other heart chambers or large vascular structures.The escape of blood from the high-pressure coronary arteries to the low-resistant region in the diastole phase causes the phenomenon of coronary stealing, which can cause ischemic symptoms and signs. Although the incidence of CAF is unknown, it has been reported between 0.1% and 1% in various case series. In the literature, the most frequent site for termination is the pulmonary artery and they rarely drain to the left ventricle. CAF can present as a congenital malformation.They can develop secondary to localized inflammation. Iatrogenic causes include septal myectomy for hypertrophic cardiomyopathy, endomyocardial biopsies after heart transplantation, and guide-wire manipulations during percutaneous angioplasty. CAF is most commonly detected incidentally during coronary angiography. For treatment, surgical ligation of coronary fistulas that cause ischemia can be performed, and coil embolization can be performed percutaneously in appropriate cases. In patients with diffuse fistulization who cannot be closed with percutaneous or surgical methods, medical therapy should be considered to reduce the oxygen requirement of the heart. The use of oral nitrate preparations is controversial as they may cause coronary steal phenomenon. Patients should be given routine treatment for coronary artery disease including antiplatelet treatment, statins, and as well as prophylaxis for infective endocarditis.

Conclusions: We report the case of a man who presented with ischemic TIA, Wellens' syndrome and the incidental finding of multiple coronary fistulae. We decided to give him guideline recommended maximal medical therapy.

Keywords: Coronary fistula, coronary ischemia, transient ischemic attack.

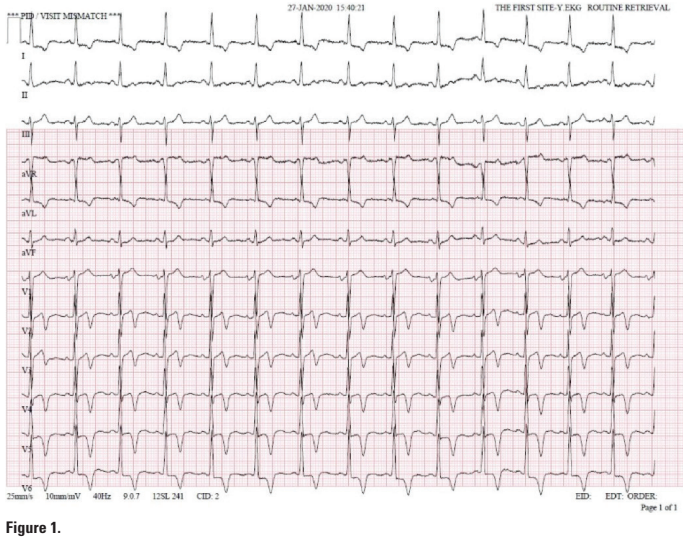

Figure 1.

SO-199

A case of percutaneous Coronary Intervention where distal balloon anchoring technique was used due to anatomical incompatibility

Kerim Esenboğa, Yakup Yunus Yamantürk, Fevzi Emre Can, Deniz Kumbasar, Durmuş Eralp Tutar

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Percutaneus Coronary Intervention could have challenges because of unique characteristics of patient's coronary anatomy. At this stage operators should choose the appropriate technique, considering the possibilities and vascular structure. In this case, we wanted to show that, as an alternative to the support wire or guide extension aid, serious lesions can be successfully intervened with the distal balloon anchoring technique.

Keywords: Myocardial infarction, balloon anchoring, miyokart enfarktüs, balon çapalama, guide wire extension.

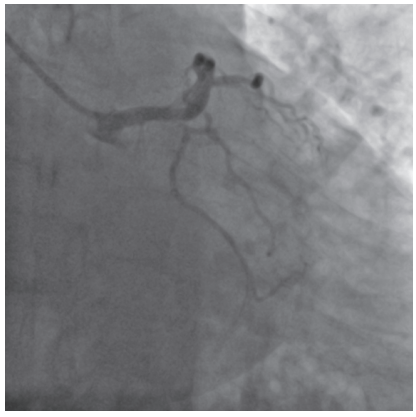

Figure 1. Serious lesion at the origin of the Cx is seen.

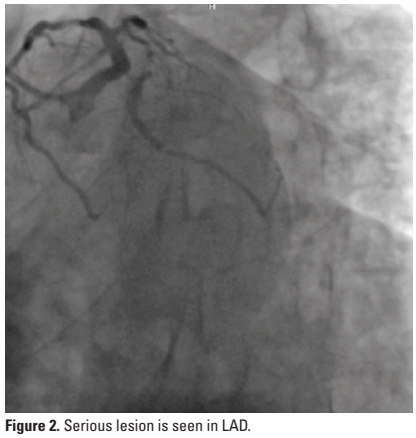

Figure 2. Serious lesion is seen in LAD.

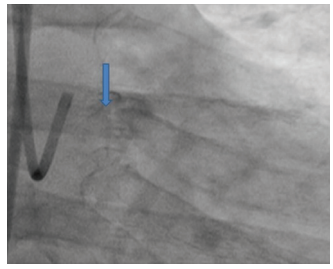

Figure 1. Broken wire in LMCA.

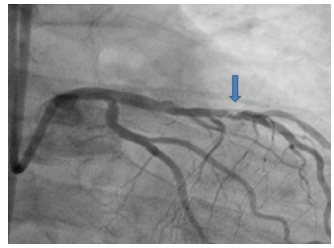

Figure 2. Broken wire extending from under the LMCA stent to the CX ostium.

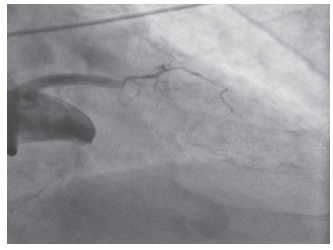

Figure 3. Total occlusion of CX ostium and LAD proximal.

Figure 4. LAD and Diagonal stenting with Tap technique.

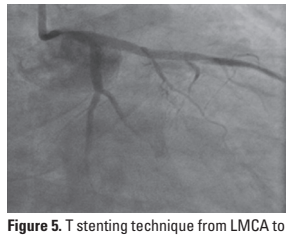

Figure 5. T stenting technique from LMCA to LAD and Cx.

SO-202

During percutaneous coronary intervention, the jailed wire breaks and deforms the stent: management of this complication

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A 64-year-old male patient was admitted to the other center with chest pain. Due to the high cardiac troponin values of the patient, non-ST segment elevation myocardial infarction was diagnosed. After coronary anjiography (CAG), 90% stenosis was detected in the left anterior descending coronary artery (LAD) in the mid region, and percutaneous intervention was decided. While a stent was applied to the LAD mid lesion, a 5-6 mm portion of the tip opaque part of the floppy wire was broken and remained in the left main coronary artery (Figure 1), and a 4.0x18 mm stent was implanted into the LMCA and this wire was jailed under the stent. However, the patient was decided to perform an emergency coronary artery bypass graft (CABG) operation due to the lack of complete opening of the stent in the LAD mid region and the 2-3 mm portion of the broken part remaining free in the circumflex (CX) artery ostium. The patient was admitted our hospital. In the control CAG of the patient, deformation was observed in the LAD stent and it was observed that the proximal edge of the stent extended to LMCA. In addition, the part of the floppy wire extending into the CX ostium was observed under the LMCA stent (Figure 2). The patient was assigned a CABG decision by the cardiac team and transferred to the cardiovascular surgery service. Tikagrelor discontinued by the surgical team during preop hospitalization. Clexane 2x8000 IU, asa 100 mg was ordered. Anterior MI was detected in the ECG of the patient with severe chest pain on the 3rd day of hospitalization. Hemodynamically unstable patient was given ticagrelor 180 mg and taken to the catheter laboratory. CX ostium and LAD proximal total occlusion was detected in CAG (Figure 3). The whisper extra support wire was passed through the stent in the stenosis region. It was predilated with balloons of various sizes. Then, the large diagonal artery originating from the stenosis region was passed with floppy wire. With the TAP technique, stenting was applied to the main and lateral branches. Then CX ostium was passed with the extra support wire for swinging wire on the cx ostium. The free wire in the CX ostium was jailed under the stent with the T stent technique. Finally, the procedure was terminated by dilatation with a 4.5x15 mm balloon in LMCA. While the jailed wire is retracting during PKG, the stent may deform or the wire may break but it is rare. At these times, the stent can be ballooned again or the deformed stent can be trapped with a new stent by passing under the deformed stent. Another option, the broken wire can be caught with snare catheter and jailed with a new stent. However, in these cases, CABG should also be considered as an option. However, in these cases, CABG may also be an option, as we think. Especially in patients who are given CABG decision after complicated interventions, dual antiplatelet therapy is not interrupted or bridged with p2y12 inhibitors is important to prevent acute thrombosis.

Keywords: Complex PCI, complication, left main coronary.